The Builder.

No. CCCCLXXII.

SATURDAY, FEBRUARY 21, 1852.

ON Wednesday evening, the 18th, the committee of the Architectural Exhibition received in their galleries, in Regent-street, a large number of visitors, including many ladies, and men connected with science and art. We cannot pretend to give the names of all who were present (perhaps 700), but we view the matter with so much interest that we will record those that we can recall, or whose names we saw on cards, without any endeavour to put them in proper order,—namely, Earl de Grey, Mr. Justice Talfourd, Sir C. Eastlake, Messrs. Heywood, M.P. J. Bell, H. Pickersgill, R.A.; Knight, R.A.; Cockerell, R.A.; Donaldson, Charles Hill, Lord Lovelace, W. Tooke, F.R.S.; T. Pettigrew, F.R.S.; Dr. Lang, Dr. Dickson, Gaskoin, Lewis Pocock, F.S.A.; C. Pearson, B. Oliviera, Hector Horeau, Herr Licht, Beaumont, Little, Chantrell, C. C. Nelson, Rev. J. Hunter, Allom, Field, Papworth, Cantwell, Fergusson, Lamb, D. Wyatt, Roberts, Griffith, W. P. Griffith, F.S.A.; Scoles, E. Sharpe, S. Lahee, White, Talbot Bury, Laxton, Richardson, Le Keux, Wilks, Truefitt, C. H. Smith, Stevens, Fowler, Seddon, Dudley, Dr. Hodgkin, Lieutenant Lewis, Martineau, Taylor, Dr. Steggall, Col. Baillie, &c. &c.

In addition to the permanent objects of interest on the walls, bronzes, drawings, and other works of art were liberally scattered over the tables. At half-past nine o'clock, by way of giving some special point of interest to the meeting,—

Professor Cockerell begged leave to propose that the Earl de Grey should take the chair, in order that a brief notice of the Institution might be laid before them. It was quite unnecessary for him to dilate on the fitness of his Lordship for the post, for all there knew how long and worthily he had been connected with the profession.

The pressure was so considerable that note-taking was out of the question, and we must content ourselves with giving the substance of what was said.

Earl de Grey, on taking the chair, expressed the great pleasure and gratification he felt in presiding over such a meeting. He was glad to be able to address them as *ladies* and gentlemen. The Architectural Association was only an infant institution, and the charge of its infancy could not be in better hands than those of the ladies. That the society was one peculiarly wanted there was ample evidence. There had been for many years an Academy; and within its walls there was a room that had long been, and he believed was still called, the "Architectural Room;" in which many admirable drawings were annually exhibited. But such was the arrangement of them, through want of space, that in looking for a particular building, the eye was attracted by a portrait above; and what appeared to have been the capital of a column was found on closer inspection to be the head of a lady. The Architectural Exhibition had been established to remedy this want, and the works exhibited upon its walls afforded the best evidence of its success. He did not scruple to assert that every one of those works possessed some kind of merit, whether originality, or ingenuity, or taste; and whatever their merits now, there could be no doubt that if the public showed proper appreciation of the author's endeavours, in another year they would be very much increased. He was himself independent of architects. There was a well-known proverb which told them that the man who was his own lawyer had a fool for his client; and it might be also said, that the man who builds his own house will have a bad customer. He had proved the truth of this to his cost. He had the greatest admiration and respect for architecture and its professors, and rejoiced that it was in his power to render any service, however trifling, to the objects they all had in view. He would now call upon Professor Donaldson, who had undertaken to read a report drawn up by the committee.

Professor Donaldson then read a brief account of the progress of the endeavour, from which we take the following:—

"The first effort ever made to establish an exclusively architectural exhibition in London was in 1845, at the rooms then occupied by the Society of Architectural Draughtsmen, in Southampton-street, Strand. The exhibitors were all members of that society, and the exhibition was free. Early in 1847, this society received a large accession of members, and its objects and ideas were greatly enlarged. It was, in fact, entirely re-formed, and merged into the present architectural association, established at Lyon's-inn-hall. In the new prospectus, 'the establishment of an annual exhibition of architectural art' was prominently set forward. In the course of session 1847-48, two or three *conversazioni* were held, at which the walls and tables of the hall were covered with drawings; and in the report read at the opening meeting of the session 1848-49, they were alluded to as follows:—

'From the great success which attended these *conversazioni*, your committee do not despair of obtaining what becomes year by year a greater desideratum in this metropolis, an annual exhibition exclusively architectural. When we reflect upon the number of drawings (necessarily from want of sufficient space) refused annually at the Royal Academy, upon the scores of competition drawings of real merit almost daily returned to their designers, and upon the many valuable studies from existing buildings shut up in private portfolios, it surely cannot be construed into any spirit of mock rivalry with any existing institution, if we endeavour to frame some scheme by which the art-loving public may become better acquainted with some of these.'

Shortly after this a sub-committee was appointed, and the first Exhibition was opened on the 7th of March, at the gallery of the New Society of Painters in Water Colours. Among the earliest visitors it may be mentioned, was the late Sir Robert Peel, who spoke very encouragingly of its prospects. The total number of visitors was about 8,000, including H. R. H. Prince Albert, the Duke of Wellington, the late Marquis of Northampton, the Earl de Grey, and many others, whose names are well known and respected in the literary and scientific world.

The next exhibition was opened at the same gallery in 1850, from August 10th to October 3rd. After the close of this exhibition, it was determined to ask an equal number of gentlemen, not members of the association, to join in forming an entire committee of management. This was done, and the first meeting of the entire committee was held February 17th, 1851.

In 1851, obstacles prevented the opening of an exhibition, and it was resolved that the donors be requested to allow their donations to become annual subscriptions,—a proposition since assented to almost universally; while the proposition to add a collection of materials, &c. bearing upon architecture was favourably received, and promises to be eventually a most important part of all future exhibitions.

The committee availed themselves of the first opportunity that offered in taking the present galleries for their exhibition of 1852. It was determined to charge an admission fee, which, as it included a catalogue, would be very small, and it is believed cannot prevent any who feel real interest from attending; nevertheless, it is still a question whether the original plan of making this a free exhibition ought not to be adhered to."

The report showed reasons why there would probably be a balance against the committee in the end; "the committee have, however, the fullest confidence in the ultimate entire success of the undertaking, and look forward to a time when the exhibition, by an increased interest on the part of the public, will become self-supporting, as it ought to be."

Mr. Godwin said the privilege had been deputed to him of proposing a vote of thanks to the Right Hon. Earl de Grey, for his ready assent to the request of the committee, that he would preside. It was not unusual for distinguished individuals to refuse their countenance to new Institutions; nor could they be blamed for doing so. They had not time to inquire into the real merits of all the schemes that were proposed to them, and they feared to risk their position by joining what, if not hurtful, might at best be evanescent. But if we could not blame these, we might praise those who, obeying a friendly impulse, or more farseeing into the merits of a proposition, gave at once their aid to advance it. It had happened to him, the speaker said, if they would pardon an egotistical observation, to receive from Earl de Grey's hands the first public testimonial of approbation in the shape of the medal of the Institute of Architects. It was several years ago, he was sorry to say, but it would be many more before he forgot the kind words of encouragement which accompanied the presentation, and he was, therefore, particularly glad of an opportunity to testify his respect. Since that time much had been done for architectural study. Architecture had been for many years in a declining state, and men were contented to copy instead of think. He ventured to believe, however, that we were now preparing to take a better road. There were numerous agencies at work; there was greater freedom of thought, more earnest endeavours to obtain principles, and he looked hopefully to the future. This *conversazione*, and the enlistment of the ladies, he thought a happy idea. Men of education even now felt no shame in admitting that they knew nothing of architecture; but if we could once thoroughly interest the ladies in our art,—that art whose mission it is to eternalize fine ideas,—that art which had covered the world with thought-giving monuments, the admiration of succeeding generations, and the ruins of which led one to say earnestly—

"Out upon time! who for ever will leave
But enough of the past for the future to grieve
O'er that which hath been and that which must be"—

this reproach would disappear. He feared, however, to detain them, and would redeem his own tediousness by proposing a vote of warm thanks to Earl de Grey for his aid and presence.

We need not say that the vote was carried by acclamation. In reply,

The Chairman said he was exceedingly obliged by the very kind manner in which he had been received. Having already expressed his sympathy with their objects and his wishes for their success, he could only repeat expressions of the real, honest, hearty pleasure which he felt in being of the slightest use to the association.

With this the actual *business* of the evening closed; but in another of the rooms Mr. Charles Pearson gave a clear and interesting exposition of his scheme for the junction of railways in the line of the Fleet Valley, which was listened to by a large audience. The meeting was eminently successful, and we mark the importance we attach to it, as an epoch, by giving this prominent position to a notice of it.

Great praise is due to Mr. Fergusson and

Mr. J. Edmeston for their exertions as honorary secretaries.

DISCUSSION ON POLYCHROMATIC EMBELLISHMENTS IN GREEK ARCHITECTURE.

A continuation of the discussion already partly reported took place at the meeting of the Institute of British Architects on the 9th instant.

Mr. Cockerell, V.P. who presided, said he had been requested to state the results of his investigations at Egina in the year 1811, which he had intended long ago to make public, and with that view had caused engravings to be made, two of which he exhibited to the meeting. It would be remembered that the temple of Egina was a work of the sixth century before Christ. It was of very small dimensions, and constructed of free-stone; being a specimen of that ancient Doric which was seen in the earliest examples. The columns and entablature were covered with a very fine coating of marble dust and pounded stalactite, as it seemed, having an effect of great brilliancy and lustre. There were no traces of colour on the columns or steps beneath them, and no part of the architrave was coloured except the tænia under the triglyphs, which was red. The triglyphs, and the background of the tympanum, were blue; the beak moulding, as it was called, had the well-known leaf ornament, and within the portico a facia band of great lustre, having an enrichment highly archaic in character, coloured blue on a strong red ground, and in several parts exceedingly well preserved, was discovered over the frieze. This, which no doubt had an excellent effect in its position, on account of the great strength of the colour, was not at all correctly represented by M. Blouet's drawing, either as to the form or the colour of the ornament. The ancient temple of Corinth was also covered with a very fine stucco, one-eighth of an inch thick, which gave to the parts the appearance of the finest marble. The same fine varnish, as he might call it, was to be found in the temple of the Giants, and other buildings at Agrigentum in Sicily. The temple of the Giants was an ashlared temple; the columns were built round a core, and the joints concealed by the stucco, the stone itself being a tufo; even the colossal sculpture of that temple was also covered with stucco. He had found many fragments in other parts of Sicily, proving the same practice of covering the temples with stucco; and the Museum of Catania contained numerous evidences of the use of polychromy. Colour was also to be traced on many remains at Syracuse: all of these were early specimens, and furnished evidences of that archaic taste which always prevailed in countries remarkable for a high patriotic feeling. He thought the attachment to what he might call excessive colouring was only to be traced in works of that early and archaic taste; and he humbly conceived, that in the marble temples of Greece, such as the Parthenon and the Theseum, which were of a more recent date, painting was employed with very great reserve. There was, however, distinct evidence that the architects of the age of Pericles employed colour—particularly crimson—and gold; and the use of crimson paintings on ceilings was constantly mentioned in Scripture. The employment of colour in Greek architecture was no doubt a fashion which prevailed more at some periods than others. There was an antique and barbarous fashion of painting statues. Pausanias referred to certain terminal figures, statues of Bacchus and others, which were painted crimson. Probably, in more refined times, as under Pericles, these fashions were modified by a higher reasoning, and overruled by a consideration of principles which ought to be carefully regarded. The subject was important in a practical point of view, and a question arose in reference to the material itself. To attempt the application of polychromy to the exquisite marble of Pentelicus appeared, indeed, to paint the lily and to gild the rose. The excessive and painful whiteness of the new marble had been justly adverted to, but it should be remembered, that what had been well described as "Nature's Polychromy" was sure to arrive in course of time. The chalky effect of new buildings was familiar to all architects; but he thought the Greeks, in such noble buildings as the Parthenon, relied upon the natural complexion given by time, and did not attempt to paint its beautiful surface. In considering the principles which governed the Greeks in the use of polychromy, he might observe that their temples were a kind of cabinet work. The temple of Egina was not more than 35 feet high, and the Parthenon only 60 feet: the Temple of the Giants, at Agrigentum,—an unprecedented instance of magnitude—was 120 feet high. In the beautiful climate of Greece, he thought a natural love for these small but exquisite temples, and the ease and pleasure with which they could be minutely examined, would induce the Greeks to paint and otherwise embellish them; just as, in England, the fittings in our apartments, as bookcases, and cabinet furniture, were richly decorated. Size was, therefore, an important consideration. He believed that the extensive introduction of painting in English churches and cathedrals arose from pedantry, and not from the natural feeling of this country and climate. He would suggest, in reference to the practical application of Polychromy, that it should be introduced with very great reserve in this grey climate, although it may have been happily and properly applied under a more brilliant sky.

Mr. Nelson (hon. sec.) said that in a recent restoration of the Parthenon, exhibited at Paris by M. Paccard, the walls of the cella had been coloured red, and the same was stated to have been the case at Egina.

The Chairman stated that he had found no traces of such colouring at Egina.

M. Servaas de Jong, architect, of Amsterdam, visitor, said he thought that the subject under consideration was a very dangerous caprice; and particularly so because it was brought forward and defended by a very skilful advocate. He did not believe that the colouring of buildings, termed polychromy, deserved so much consideration, especially in England. He thought that if colouring ever was in use among the Greeks for the external decoration of their pagan temples, it could only be considered as the expression of a frivolous and worldly, not to say physical, religion. Similar usage of colour had occurred in the interior of Roman Catholic cathedrals in the fifteenth century. But in the present day to cover the interior of an architectural work, civil or religious, with colours like the interior of a theatre, would be an imposition on the simple and modest character of the faith of the English, and an attack upon the fundamental law of architecture, that the eye rests with delight, without being dazzled, upon sublime and harmonious effects, which spring from the chiar'oscuro of the profiles, and not from contrasted colouring. Polychromy in moderation was acceptable for the interior of buildings dedicated to pleasure and relaxation, as well as in private houses, being carried out on information existing long before the publication of this book; but it was not adapted to the interior of public edifices devoted to study and serious business.

Herr Licht, architect, of Berlin, visitor, explained his views as to the intention of the ancient Greeks in adopting polychromy, and the reasons for decorating with colours in modern architecture. He considered that the colours were intended for ornament; that they were indispensable by reason of the taste for colour existing among southern nations; and that they were designed for protecting the material. Colour, he said, was an effective, and therefore requisite instrument in the hand of the architect; but its intended effect could only be produced when the idea which the architect wished to express, was harmoniously and perspicuously carried out, when the colour completed the development of the idea itself. That the Greeks, whose architecture we admired as the perfection of art, even before we knew its connection with polychromy, employed the latter, was no subject for reproach, either to the artistic cultivation of the Greeks, or to our own admiration of the beauty of their structures. It must be remembered, that our impressions of Grecian edifices were either the offspring of the imagination alone, which pictured them as existing under our gloomy northern sky in all the dazzling whiteness of their magnificent material, or they had been acquired from actual examination of the mouldering ruins, yellow with the lapse of ages, under the clear and glorious sky of Greece; in either case, no inharmonious picture met the eye of cultivated taste. If we imagined, however, the temples displayed in the glittering and almost transparent purity of their white material, under the lustre of a southern sun—the piercing glare of such an object would be not merely injurious, but destructive to the sight. A building of well-burnt bricks, of hewn stone, or covered with a weather-proof cement, did not need the further protection of colour; but the structure, which had lately developed itself in England, and announced a new era in architecture, the structure in iron, required such aid from the very nature of the material. A significant, eventful form of building, in which the spirit of our age was reflected in all its greatness.

Mr. Harding, visitor, thought that the employment of colour by ancient architects on their buildings, had been placed beyond dispute by the observations which had been made at the last meeting, and that the point which remained to be decided was, whether the architects of the present day should follow this example, entirely or partially, or reject it altogether. Professor Donaldson had said, that we should defer to the authority of the exalted genius, which had produced monuments that had been objects of admiration and text-books of study for ages; but Mr. Harding could not easily agree in this opinion, unless he could previously persuade himself, that because the Greeks were great as architects they were also great as colourists. With the architect as with the sculptor, form was the great field for the display of his powers, in which he was the acknowledged teacher, and the public were his pupils; but if he touched colour, he converted his pupils into disputants, and made those who would admire his forms entirely lose sight of them in the provoked discussion on his application of colour. He hoped he might be excused for this expression of his opinion, and for saying that he preferred to be guided to conclusions in theory, and results in practice, on this subject, by an older, more able, and unerring teacher—Nature. Stone of any kind might be employed for the purposes of building, and, putting aside the cost of obtaining the different marbles, these presented tints of every variety, sufficient to satisfy abundantly the most craving appetite or the most fastidious taste for colour. Here we stood in no need of evanescent pigments to decorate and deaden, and leave futurity to discover, by toil and travail, whether the architects of to-day, who would be ancient masters to posterity, were polychromists as well as architects.

Mr. Owen Jones expressed his fear that anything he could say on this interesting subject would be very unsatisfactory. The question was not altogether one of taste, or whether the Polychromy of the Greeks was such as we should approve of; because we did not at present know enough about it to form an opinion on that point. Now, however, that the public attention was directed to the subject, it might be hoped that the same careful investigation would be bestowed upon the colouring of the Parthenon as Mr. Penrose had devoted to its form; and it would then be known whether the Greeks were as imperfect in their application of colour as Mr. Harding supposed. For himself he did not believe that would prove to be the case, or that a people so refined as they were could be so defective in their knowledge of a sister art. He could not, indeed, conceive it for an instant. There was already evidence which could not possibly be controverted that the Parthenon was partially coloured, and he considered that it might be assumed, in fact, that it was entirely coloured. He agreed with Mr. Donaldson in the opinion that the Parthenon was first covered with a thin coating of stucco. Of course this would appear very frightful to those who were accustomed to look upon the white marble of the Parthenon as such a wonderfully beautiful material. He denied that the Greeks so regarded it. The Parthenon was not complete in any way without its colour; nor were any of its mouldings perfect without their coloured ornaments. The question of introducing colour in this country was altogether a distinct one. He did not think the time had arrived for us to do so; indeed, we were not able yet to devise an architecture of our own. When we had made our own buildings, we might colour them according to our own modes of thought; but at present we transplanted a Greek temple into England; and, in his opinion, the colouring on it would be no more out of place than the building itself.

Mr. I'Anson, Fellow, stated that in the year 1836 he was at Athens, when the remains of the Temple of Victory without wings had just been discovered, and upon the fragments of it he observed distinct traces of painting, especially in the coffers under the pediment. As to the modern application of colour to external architecture, it was evident that the prevailing feeling had been against it. The effect of colour in the restoration of the Cathedral of Spires, now in progress, was highly imposing. In the cathedrals of Coblentz and Cologne, colour was also employed, but less successfully; and even the most ardent admirers of polychromy in Germany

had only partially applied it to external decoration.

Mr. Donaldson wound up the discussion, and observed that the question under discussion was simply a question of research, the object being to establish a fact; and justice should be rendered to M. Hittorff for his labours, with that end in view. No person, he believed, would attempt to deny the fact that the Greeks used colour. Although the climate of Greece suggested the use of colour, this was not even a question of climate; because in the frozen climate of Russia the churches were covered with porcelain, and their roofs gilded and painted. Size had also nothing to do with the question. There was not in London a portico of the size of the Parthenon. As to material, the Athenians employed marble because it was ch aper than stone; and it was well adapted to show those beauties of form, which was a primary object with them. Mr. Harding preferred the Apollo Belvedere as a living object, and not as a dead corpse, but surely the application of colour would produce the effect of life. He had no doubt the ancient Greeks did paint their statues; and even certain modern sculptors were endeavouring, by delicate tints upon the hair and garments, to produce the same effect. Accustomed as we were to consider a marble statue the perfection of art, it was difficult to overcome the prejudice against colour; but the more the question was studied, the more should we do justice to Greek art, and advance in art ourselves. He certainly believed that the Apollo was painted originally, or, at all events, toned in a delicate, sensitive manner, to neutralize the effect of the cold marble. In his recommendation of coloured stones Mr. Harding adopted polychromy, which was not a question of material. The marble arch in Oxford-street was a cold, dead, tasteless monument; but if marble of different colours had been employed for the columns, the frieze, and the panels, it would be more expressive and more beautiful.

FINE ART: ITS NATURE, RELATIONS, AND TENDENCIES.

IF life be, as in its best and most comprehensive signification it undoubtedly is, the *summum bonum* of man, the perfecting of which is at once his greatest present advantage and highest future hope, it follows, as a necessary consequence with regard to the component parts of life, that they are to be estimated in proportion to the directness and extent of their connection with its highest and most perfect development. It is only by a continuous reference to the perfected idea of life that we can establish a correct estimate of any one of its component parts, or rightfully discern the relations and tendencies of it. I wish after this method to examine that part of life which we call Art: I propose to inquire—1stly. Its nature,—what art is; 2ndly. Its position with regard to the more exact and practical developments of the human intellect,—or its relations to science; 3rdly. Its tendencies,—what in its present state it does.

1st. What is Art? The dictionaries offer us three equivalents in exchange for the word "art," viz. "science—skill—cunning;" as if implying in the professor of art, knowledge of its principles, experience of their powers, and dexterity in their application; and, in ordinary judgment, any work in which these three qualities are so far displayed as adroitly to meet a preconceived standard of taste, is estimated as a work of art. But a small amount of critical experience, if only it be united to truth-seeking principle, will soon discover to us that the essential being or vitality of art is not contained in the dry skeleton of rule and theory; and that it is possible for a man to have at his finger-ends, as it were, the Academy Lectures of Reynolds and others, or the works of Bach and Albretsberger, or the precepts of Vitruvius, or the *Ars Poetica* of Horace, and yet be an ineffective painter, a pedantic musician, an imitative architect, a word-jingling poet; for it is not the rule that makes the artist, but the artist that reveals and practically expounds the rule, which is itself a detached portion of the great whole of art; and an attentive examination of the great works of the great masters of art will show us that they were wrought, not as from below to the letter of an arbitrary and inflexible law, but as from above, in the spirit of a pervading and expansive principle; and the *Apollo Belvidere*, the *Last Judgment* of the Sistine Chapel, the *Sinfonia Eroica*, or the *Paradise Lost*, are, in this view of the subject, not wonderful and all-excelling achievements of technical dexterity, but the natural and exalting results of the unimpeded progress of the soul of art, which is not a theory, nor a formula, nor a doctrine, but a life. Considered then in reference to the entirety of life before spoken of, I would offer as a definition of the thing art, *a spiritual apprehension of nature*; or that power by which the artist using his intellectual faculties in obedience to the dictates of the spirit, discerns in, and evolves from, the subject of his action, a range of ideal power and result, which, in its ordinary acceptance, it gave no evidence of possessing: the broad sea-port river, with its mast-crowded docks, its white-sailed ships and rapid steamers, its long-stretching quays, its floodgates, and shifting busy crowds of men, which to the common eye is suggestive but of the speculations of commerce, or the demands of toil, is to the painter an inexhaustible panorama of picturesque combinations of form, of exquisite and changing harmonies of colour, of powerful contrasts of effect, and ever-varied phases of feeling and expression, from the clear fresh sparkle of the early morning, to the soft still shadow of the warm dusky evening: he looks with a spiritually discerning eye on the face of nature, and to the flash of her beauty gives back an answering beauty on his canvas bright with the lustre of the life of art. And the poet from the same materials can build the lofty rhyme, and open to our view unthought-of depths—

"Of man, of nature, and of human life."

In like manner the architect, from necessities of construction, and the musician from impulsive issues of sound, work in obedience to the same principle; and throughout the whole range of art, we ever find in its productions an attempted material expression of the feeling of a spiritual life. For as in the moral or religious life goodness is the prime wisdom, and in the intellectual life wisdom is the chief good, so the issue of the art-life, which in its perfect form is the result of the union of the former two, is the feeling and expression of the beautiful; and art is beauty in its holiest and wisest form,—beauty perfect in the purity of goodness,—pure in the perfection of intellect.

Again, as art is a life, its works live also; for as art-law is but the sample or exponent of the entirety of art, so art itself is but the exponent of the æsthetical infinity beyond it; and its works partake of the nature of their agent. True, they are subject to the accidents of times and fashions; they may be decried, slandered, or, worst of all, despised; but in the end art, like wisdom, is justified of her children; and its work, emerging from unmerited obscurity, assumes its legitimate position; or, if it fade into oblivion, does not do so until either, by direct or indirect influence, it has given birth to an equally excellent and more fortunate successor.

True art (in its full acceptation) is an expression of our whole life, *i. e.*, of all nature and human history and experience; and when we gaze upon any real work, whether it be architecture, sculpture, or painting, or whether Egyptian or Indian, Roman or Gothic, we behold a reflection of nature,—its effect upon the human mind under the varied circumstances of life. Art is nature, not with corrections and revisions, but with notes and annotations; and as it is nature stamped with the signet of mind, it is itself, in the highest sense, nature,—an union of the physical and the spiritual. It is "the man-child that is born to the soul," whose "life still circulates in the babe."

Moreover, the arts are one; they are alike discernments of the spirit or higher intellect; and their works are alike the result of that spiritual discernment. Poetry is art, as all the arts are poetry. Poetry may be looked upon as the art-spirit that reveals itself in a literary pictorial, sculptural, or architectural form; and it is the living presence of the art-soul in the expressed work or performance that stamps it a work of art. It is not columns and entablatures, nor buttresses and arches, that constitute a building or architecture; nor is it an acquaintance with the recognised canons of art that make the architect, but the power to *project* himself, as it were, into these media of his calling, and thus expound, in characters of wrought and carved stone, the dictates of the oracle within. It is the same in poetry, which is not rythmic or cadenced words, but a voice of the heart, "a thought so passionate and alive, that like the spirit of a plant or an animal, it has an architecture of its own." The true artist works from within outwards, and the man that cannot do this is not an artist in the full sense of the word,—if he be only master of the technicalities or language of his art. Not but that much difference exists between these art-languages, not only as respects the mode of their reception by the mind, but with regard to their relative importance in their respective branches: sculpture, painting, architecture, and music cannot be attained without long practice, while poetry requires little or no application or study of rules, scarcely anything beyond common knowledge of language and grammar: the architect and artist must go through long elementary training in the studio, while the genius of the poet may blaze out in a day, and illumine the office or the workshop: the architect and painter must be devoted exclusively to their profession: the bard may walk

"In glory, and in joy,
Behind his plough upon the mountain side."

He, therefore, who has learnt to represent any natural object faithfully, though he has only acquired the language of his art, has done, I conceive, a great deal more towards being a real painter, than the man who has learned to express himself grammatically and melodiously has towards being a great poet. I deny that language is of the same relative importance in all the arts,—that the value or importance of a picture, for instance, depends as much upon the mere telling of a story, as the poem upon its fable or subject. I consider that the painting is infinitely more of the picture than the grammatical and cadenced words are of the poem, because the painter's art is almost entirely imitative. In painting, language pervades the whole art and all its operations: the painter never ceases learning this language: increased knowledge of it is part of his advancement. Some of his works are almost, if not entirely, composed of language. To paint a picture chiefly to tell a tale is to degrade painting as an art of the beautiful;—to take it out of its province, which is to convey those truths that could not be taught by other means than those that appeal to the eye; not to convey that which could be better told by other arts. To show how small a part of a great picture the telling of the story is, and how much it is dependant for its effect upon the charms of colour and form, let the same story be told in plain words, or made the subject of a newspaper paragraph. Persons who deny this consider the resemblances between the arts, but forget their differences: as the poet has to assert those truths in words that could not be expressed on canvass or in marble, so the painter and sculptor are to raise those ideas and excite those emotions that can only, or at least best, be raised and excited through the medium of the eye; and the musician those that the ear only can receive, or best receive. There are truths of nature to be impressed upon the heart that could not be put into words, and can only be conveyed through the medium of the sight; and such are among the embodiments of the painter, sculptor, and architect. What is here said in reference to the eye may be affirmed with respect to the ear, which has also its especial and exclusive province in art. Who, I would ask with Carlyle, could describe in logical words the effect that music has on us?

But to return to our comparison of the arts themselves. In every one of the fine arts, as I endeavoured to show on a former occasion, the same law holds sway: the elements used for any one art, as essential to a given expression, are those which are also employed in the others. The architect, for instance, takes the elements of sublimity, and the broad and harmonious walls rise up, and we stand under the dome of St. Paul's, or gaze on the chaste fane of Minerva. Next comes the musician, and

the orchestra is thronged with its thousand voices; in broad streams of sound pour out each well-defined phrase, with a full and telling energy, as with a voice of deep calling unto deep; the answering parts fugue in, whilst harmonic purity adds its soul of strength to all, and we listen entranced whilst Handel rolls out the sphered thunders of his hallelujah. The sculptor next essays, and the colossal statue towers up: in broad folds falls the drapery: lofty decision of expression marks the attitude, energetic fulness the contour, a dignified purity the whole treatment; and we gaze with wonder on the Moses of Michelangelo. The poet next succeeds, and then (in the highest degree) the elementary terms are no longer words, but living realities: the magnitude is magnitude of soul; the breadth, a world-encircling comprehensiveness of the intellect; the decision, a subtle and unerring exactitude of definition; the fulness, an inexhaustible depth and pregnancy of meaning; the purity, a celestial exaltation of language; and we drink in the inspiration of that most ancient poem spoken unto Job "out of the whirlwind."

It would be easy to pursue this mode of exposition further, and to show that in every variety of expression the same principle of inflection holds good in every branch of art; and it is easy, too, to object to this, that it is an argument more of fanciful analogy than of primary identity; but those who would advance this objection seem to forget that art being in its expression the offspring of idealism, the analogies of the separate branches are ideal likewise, and as such cannot be propounded with the precision of a mathematical problem. We cannot in every case convert the practical rules of any one branch of art into those of any other, as we would convert fractions into decimals; but the identity of principle may be seen, and by the mode of illustration I have adopted is, I think, shown as clearly as we can discern the integral-part identity of the decimal with the fraction; and the practical analogies that we can point out, though few in number, offer very presumptive evidence in favour of the ideal ones: the musical law, for instance, of harmonic progression which prohibits the monotony of similar motion, and the consecution of fifths and octaves, needs little more than the substitution of pictorial for musical terms to render it into the rule of painting, which forbids the repetition of similar lines and forms, and the monotony of equivalent tones of colour. The rule, too, by which the discord is used in music in opposing juxtaposition to the concord, yet connected with it by preparation, and led off to it again by resolution, is strikingly similar to the pictorial rule, by which the highest light and deepest shadow are brought into immediate opposition, yet harmonized by a just connection with their respective masses. The central identity of the Proteus, art, is further evidenced by the reciprocal influence of its respective branches: the architect supplies the painter with a subject, and the painter, in return, furnishes the architect with valuable hints of picturesque combination: the painter and musician inspire the poet, who in return inspires them: the margin of Michaelangelo's copy of the *Divina Comedia* is crowded with graphic illustrations of the text; and traces of a feeling are often perceived in painters and sculptors caught from some great preceding poet, whose spirit is long recognised in their productions.*

S. H.

Architectural Institute of Scotland.—The Institute met on Thursday, the 5th instant. Mr. Rhind in the chair. A paper was read on "The National Monument of Scotland," by Mr. George Cleghorn, of Weems. The paper concluded by strongly urging the people of Scotland to carry the magnificent work to a conclusion. It was stated that Mr. Linning Woodman had received a letter from a Scotchman in London, offering to give no less a sum than 10,000*l.* if the people of Scotland would bestir themselves in earnest for the completion of the monument.

* To be continued.

THE EXHIBITION BUILDING.

The evidence taken by the recent commission has been printed, and will very soon be placed before Parliament. We are able to lay before our readers some of the leading points elicited in the course of the inquiry. First, as to the cost to the Government of purchasing the building precisely as it now stands. Sir Charles Fox stated that the contractors had received from the Royal Commissioners about 140,000*l.* for the use of the building, and that the latter declined to entertain the question of its purchase, though they still had the power of buying it for a total of 205,000*l.* The value of the materials, to pull down and sell, had been estimated at 33,250*l.* and the labour and materials had actually cost the contractors 160,000*l.* Some private *bonâ fide* offers had been made for the purchase of the building, but they would not entertain them till the Government decided; and, under all the circumstances, the price to the Government (in addition to the 140,000*l.* paid by the Royal Commissioners) would be 65,834*l.* besides the cost of maintaining the structure from the 1st of December last, and interest on the difference between the amount already received and the total price to the date of the purchase.

The next item was the cost of the extensive alterations necessary to render the building of a permanent character, so as to require only ordinary repairs for fifty years to come. The estimate for these was 26,000*l.* Another important part of the inquiry related to the cost of taking down the building and restoring the site, and re-erecting it in some other situation. In this operation, the above alterations for making it permanent would be included. This cost would be 61,500*l.* assuming that the building was only removed within a carting distance, such as Battersea or Kew, and that the site should be as favourable for the foundations as in Hyde-park. A permanent structure, therefore, in another place, exactly resembling the present, might be obtained for 127,334*l.*—always in addition to the amount already paid. If made permanent, the annual cost of maintaining the building in good condition, including painting, without reference to its application to any special purpose, would be 5,000*l.*

Mr. Dilke's evidence was limited to the details of a suggestion made by him for removing to the present building some portions of the contents of the British Museum. He dwelt upon the overcrowded state of that collection, and the intended outlay of 200,000*l.* for an addition to it of the side towards Montague-place; which might be saved by taking advantage of the great capabilities of the Exhibition Building.

Mr. Fleming, the head gardener to the Duke of Sutherland, at Trentham, gave some evidence on the proposed conversion of the building to the purpose of a winter garden. Separate portions might be heated to any temperature; but, generally, a sufficient degree of warmth to exclude frost was all that would be required. He suggested acacias, oranges, citrons, camellias, rhododendrons, fuschias, balsams, &c. as the kind of plants to be introduced, and estimated the necessary labour at 500*l.* a year (exclusive of staff); but in reference to other points that were suggested, admitted that it would be insufficient.

Sir Joseph Paxton urged the same appropriation of the building, and entered fully into its details. The only departure he would suggest from a moderate temperature, would be in one small portion of the building, which he would appropriate to the Victoria Regia. He objected to any reduction in the size of the building, and thought no site could be better for it than Hyde-park. He submitted a view, plans, and estimates, for its conversion to the purpose in question, including four brick towers (coated with ground glass) at the angles, for the ventilating shafts. This project included semicircular additions at the east and west ends, with buildings for gardening purposes; and an entrance and exit in the Kensington-road, for the passage of visitors, by staircases, across the Drive into the gallery-floor of the building. His estimate was, for ground-work in the interior, 5,000*l.*; heating by warm water, 7,000*l.*; walks, &c. 5,000*l.*; the proposed additions, towers, entrances, and improved ventilation, 32,000*l.*; contingencies, 3,000*l.*; making a total of 52,000*l.* The cost of maintenance would be 5,000*l.* a year for the building, and 7,000*l.* a year for the garden. He should have wished the building to be opened gratuitously, but as it must be self-sustaining, a small admission-fee must be charged,—one penny on certain days, and more on others—with yearly tickets. A much better building for the purpose, by beginning *de novo*, and introducing various improvements in design and construction, would probably not much exceed, in cost, the alteration of the present.

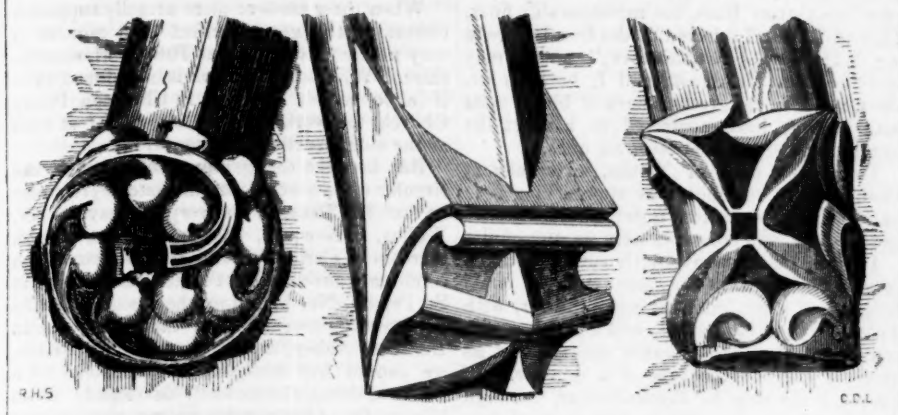
Mr. Kelk represented the injury he had sustained by being unable to sell his houses since the Exhibition Building had been placed in front of them. No other cause had prevented their going off, and applicants were now only waiting to know the fate of the building. He had contributed 1,500*l.* towards obtaining an opening to the Park at Princes-gate, and would give 3,000*l.* more rather than have the building made permanent. No building there, however handsome, could be otherwise than injurious to his property. He had already lost 5,000*l.* in interest, ground-rent, &c.

Mr. E. Hawkins, of the British Museum, stated that that building was much too small, and its Grecian architecture the worst possible for the purposes of a museum. The Exhibition Building was, however, a mere case, and the expense of constructing a museum within it would be quite as great as that of erecting a new building in the best possible way for the purpose. If the sculptures were removed from the British Museum, they ought to be accompanied by the coins, medals, bronzes, vases, and even the library. A building of iron and glass attached to the present Museum might possibly be very beneficial: and the building in Hyde-park would be well suited for the reception of casts from the marbles in the Museum, and of all the best statues in Europe.

Mr. H. Cole, on the assumption that the National Gallery is to be removed to Hyde-park, proposed the immediate appropriation of the Crystal Palace to a great educational institute, combining many important objects. Among these were a trade collection (already in progress of formation in the building), and collections in aid of the objects of the museum at Kew, the Museum of Practical Geology, the School of Design, the British Museum—especially an archæological collection, &c. &c. All these establishments were suffering from want of room, and it was most important to use the existing building. The School of Design should be at once removed there. As the building was not the best that could be devised for these purposes, he proposed to lease it only (at an estimated cost of 14,000*l.* a year); and believed that the advantages to be derived would lead the public in a very few years to demand and pay for a better building. It was important, however, to begin at once, and make the best possible use of the covered space, so much wanted for many useful purposes.

Schools for Yarmouth.—The want of school accommodation at the north end of Yarmouth being much felt, it is proposed to convert to the purpose the old Benedictine Priory, adjoining the churchyard and parsonage. This belongs to the Dean and Chapter of Norwich, who have agreed to convey it to trustees for the school, free of expense; but as the buildings are now under lease for a term of years, it is necessary to purchase the tenant-right, for which 600*l.* are required. It is proposed, by the conversion of old buildings and the erection of others, to provide accommodation for 750 children in three school-rooms, with class-rooms to each, and two residences,—the whole to cost, with the site, 2,300*l.* The old hall of the Priory, now used as stables and hay-lofts, 52 feet long, by 30½ feet wide, will be the boys' school—a noble room, and well worthy of restoration for so good a purpose. We wish the committee success in their endeavours, and shall be glad if this notice procure them any assistance.

HOOD-MOULD TERMINATIONS.



HOOD-MOULD TERMINATIONS.

THE annexed sketches represent hood-mould terminations from Little Wenham Priory, Suffolk, one-fourth the real size.

R. H. S.

THE VENTILATION OF THE HOUSE OF COMMONS.

ALTHOUGH the newspapers have teemed with the discussions upon the failure of Dr. Reid's attempt to ventilate the House of Commons, and although Dr. Reid has been allowed to make an *ex parte* statement, throwing the whole of the blame on Sir Charles Barry, without giving him the opportunity of reply, I have not yet seen in any publication a statement of the facts sufficiently lucid to enable the public to judge of the case upon its real merits. Having had constant opportunities during the last three years of watching all the arrangements connected with this question, I beg to lay before you in as concise a manner as possible a statement of facts, upon the principal points to which Dr. Reid, in his evidence before the House of Commons, on February 6th, 1852, attributes his failure.

Since the year 1846, when the House of Lords "subverted" Dr. Reid's plans, and confined the exercise of his talents exclusively to the House of Commons, Sir Charles Barry considered it necessary to have the whole of Dr. Reid's requisitions conveyed to him in writing; and the extent to which they have been carried out may be judged of by the fact that upwards of 57,000*l.* have been expended on his plans alone, and further, from the statement of Lord Seymour in the House of Commons last Wednesday week (who, as the official superior both of architect and ventilator, may be supposed to possess an accurate knowledge of the subject), "that in no case had any written requisition of Dr. Reid's been disregarded," we may, I think, fairly assume that every facility to carry out his plans has been afforded him, and that the whole of his demands have been complied with, with the single exception of the removal of the paint (*not* offensive oil, as he stated) from the perforated iron floor of the House.

This paint, of which the Doctor makes one of the great points contributing to his failure, has been laid on *more than eighteen months;* and I will ask any practical man, what quantity of "offensive oil" can remain to contaminate air passing in contact with it after that time; and, as a further proof of the small value of this objection, I may mention that the floor of the House of Lords, upon the ventilation of which not a dissentient voice has been heard since its completion, was coated in a similar manner.

Another matter to which Dr. Reid attributes his failure, is the imperfect ventilation of the gas-lamps. These, which are constructed on Faraday's patent, I have myself tested, by partly removing the talc cover over the top of the glass, and I have in every case found a strong current inwards, incontrovertibly proving that the products of combustion are entirely carried off, without contaminating the atmosphere of the House.

If Dr. Reid imagines he can quietly draw down his air, without its being reversed by the rarified column produced over these lamps, he proves the truth of his own statement, "that he might as well be asked to control the air of the Bay of Biscay."

This is *indeed* "a practical difficulty under which he labours."

The imperfection of the drains is another matter complained of, although the Doctor must have known from the plans, the purpose, and position of each. A portion of them were even put in by workmen under his directions, and from his own drawings. It is, indeed, true that had not the greatest possible care been taken to prevent offensive matter from entering these drains, and also in trapping them effectually, the Doctor *would* have brought about the result of which he complains, by blowing his steam and hot water into them, the effect of which, in creating offensive vapours, every practical man is fully aware of.

Another "great practical difficulty" that the Doctor advances is, that although the area which was committed to his charge to ventilate was defined architecturally "by walls at one place and walls at another, it could not be defined as a pneumatic boundary, for there were no means taken to exclude the external atmosphere where the architectural boundary terminated."

I am quite sure, Sir, that your readers will consider that this, instead of being an obstacle, was one of the greatest advantages to his system; for had his "pneumatic boundary" been defined, as he wished it to be, by the external atmosphere, he would have been subject to the continual fluctuations in temperature, varying from 20 deg. to 80 deg. Fahr.; he would *then* have been "subjected to currents on every side, which blow hot and cold air;" whereas, being surrounded as he is, by a perfectly ventilated area, capable of being maintained at any required temperature, an unlimited command is given him over the temperature of the currents of which he complains.

Another practical difficulty under which the Doctor states he labours, is "from innumerable chimneys, that pour forth volumes of smoke into the surrounding lobbies. Torrents of smoke come in, so that the House sits in an atmosphere of carbonic acid."

Although a few of the chimneys surrounding the House lobby did at first smoke, immediate and effectual measures were taken to prevent a recurrence of the evil, which could and ought to have been remedied before the sitting of the House, had the Doctor's system been in full operation.

The foregoing are the principal faults that Dr. Reid in his evidence alleges have prevented the carrying out to perfection his system of ventilation, but he has *entirely omitted* a most important fact, viz. that for the purpose of propelling a sufficient current of air through the House, a steam-engine was provided, and fixed under his directions, connected with a large fan, which engine was *obliged to be removed in consequence of the great noise made in its working being heard over the House.*

Your readers will be able to judge from *which* of the causes the failure of the ventilation has arisen; whether from those to which Dr. Reid attributes it, viz. to the lamps, drains, oil, chimneys, &c. or from the failure of the steam-engine, which he had provided to propel the current of air through the House, and which, although abandoned by him, was passed unnoticed in his evidence.

Again, can it be credited, that after receiving for superintending the ventilation of this comparatively small chamber, since the year 1846, a large salary, together with a staff of 1,300*l.* per annum, to which, his original assistance being found inadequate, he demanded and obtained the addition of three engineers, he should without previous protest, although he states "he anticipated those defects," have allowed the House of Commons to meet, and after nearly stifling them with the impurity of the atmosphere, should, upon being examined, coolly tell them that for 200*l.* or 300*l.* he could "remedy the great defects in two days"!!!

Further, can it be believed, that Dr. Reid, after replying (to one question of Lord Seymour) that he was a "medical man and not an architect," and to another, that he was a "medical man and not an engineer," should ask the House of Commons to give him entire control over the architect, whose system of ventilation, carried throughout the remainder of the building, has been perfectly satisfactory and comparatively inexpensive?

In conclusion, I beg to ask whether the foregoing facts do not prove, either

That Dr. Reid's system is a failure in principle; or,

That from his want of practical knowledge he has been unable to apply it to the building; or,

That he has, from some unaccountable motive, purposely failed. WM. JEAKES.

*** We insert Mr. Jeakes's statement, because we know he is intimately conversant with the particulars, but we must reserve any opinion as to the success, or otherwise, of Sir Charles Barry as a ventilator. It requires a large stomach to swallow a charge of 200,000*l.* for such a purpose. We propose a personal examination next week.

ON THE ARCHITECTURAL DISTINCTION BETWEEN CATHEDRAL AND PAROCHIAL CHURCHES.*

THE lowest class of structures which seem to me to approximate in any degree to the character of a minster, are certain moderate-sized cross churches without aisles, but with four arms of the full height, and with the predominant central tower. Those that I am going to mention were actually conventual, and I think there is something about them which at once indicates the fact. Such is Leonard Stanley, in Gloucestershire, a perfect Norman shell, with later alterations harmonised with the original work, in a manner unusually careful and ingenious. Such is Llanbadarn-fawr, in Cardiganshire; such seem to have been several other of the smaller Welsh monastic churches, as the priories at Haverford-west and St. Dogmael's, though these seem to have introduced a much greater degree of ornament. At St. Dogmael's, some parts were vaulted, as was also intended in the choir at Leonard Stanley. At Pill, near Milford Haven, there stands a very fine fragment,—a single arch of a central tower, which, to judge from such slight evidence, would seem to be the remains of a church quite of the same type as Stanley or Llanbadarn.

Something of the same kind may be traced in Lapley Church, Staffordshire, which was also conventual, but a rather more elaborate tower takes away somewhat from the simplicity of the type, and the present aspect of the building is certainly not improved by the demolition of its transepts. The same character possibly also existed at Stanton Harcourt and Cholsey, but later alterations have done much to destroy it. In all, or most, of these churches, we may observe the great proportionate length given to the western limb.

I am not sure that there is not a nearer approach to the conventual idea in these aisle-

* See p. 4, *ante*.

less churches than in most of those which might formally rank immediately above them, cross churches, namely, with aisles. Certainly, no form better combines simplicity, regularity, and picturesque effect than that of Stanley and Llanbadarn; and its very simplicity prevents the admission of any positively opposite element. Whereas, when there are aisles, the aisles may be treated, inside or out, in a purely parochial way, or some irregularity may be introduced which may make them depart farther from the type of the minster than the smaller buildings. Thus, at Purton and Cheltenham, as I before said, there is a picturesque grouping of gables and distinct roofs, unsuited to the cross form: at Cricklade, notwithstanding some exceedingly noble individual features, there is a general irregularity, which is highly displeasing. I certainly think that every cross church with aisles ought to have a clerestory, if only to avoid the junction of the aisle and transept roofs, which is not agreeable on so large a scale.

Now when this clerestory is combined with a high roof, we have gained, in external effect at least, another very important step towards the cathedral effect. In common parish churches we generally have to choose between a clerestory and a high roof, the height being not sufficient to allow of both. When both are united there is an appearance of general bulk, which is highly effective. This may be seen very eminently in the Priory Church at Brecon,—I suppose the grandest existing church in Wales, after St. David's and Llandaff, and which ought to be the cathedral of a new diocese. This church is a great advance upon Llandabarn; besides the nave aisles, though there are no regular aisles to the choir, there is a rather complicated arrangement of chapels, and the choir, a splendid specimen of the pure Lancet style, has been designed for vaulting. It comes very near to the character of a minster, but has not quite attained it. Even at Shiffnal, the union of the high roof and clerestory, though the latter is so small that it is not even pierced, produces a sort of solemn and quasi-monastic effect, quite beyond the common run of parochial cross churches. We see the same union in Wimborne Minster; but this church, on the one hand, has other cathedral features; on the other, the choir clerestory is insignificant;* while that of the nave, with its square-headed windows, is of an eminently parochial character, and very inferior to the beautiful one at Brecon.

Another very great point, and one even more rarely secured than the high roof and clerestory, is to have a genuine west front, forming a real architectural composition. Every one must have seen how often in churches, even of very considerable pretensions, which have a central tower, the west front seems to be in a manner left to itself, not made to form any architectural design. This is conspicuous in Shiffnal Church; in St. Giles, Northampton; and even in so large and sumptuous a church as St. Mary's, Stafford, where no care or ornament whatever is bestowed upon the west front: even one of the aisles is left without any western window. Felmersham, in Bedfordshire, figured in Mr. Petit's "Architectural Character," is a grand example to the contrary, as far as concerns the nave, whose termination is sumptuously arcaded; but even here the ends of the aisles are left quite bare. So at Berkeley, the west end of the nave is a most noble Lancet composition, but it is ruined by the beggarly terminations of the aisles of rather later date. Replace the nave gable, and build a pair of western towers, and this front would rival Llandaff; but at present it is not a satisfactory whole. At Melton Mowbray a very fair Decorated front is spoiled by the addition of a magnificent western porch.

Very different is the case with the two noble churches of Yatton and Crewkerne, in Somersetshire. I will not enter into any minute criticisms upon them, having recently done so before the Archæological Society of their own county; but I may say that here we have real architectural designs, worthy of forming part of a cathedral or abbey. Crewkerne front is very like that of Bath, but incomparably finer. That of Yatton I selected as the frontispiece to my "History of Architecture;" and I may mention that Mr. Jewitt and I, between us, though by far the greater share of blame rests with myself, have contrived to convert the hexagonal turrets into octagonal ones.

The whole nave of Yatton, externally at least, may be considered as approaching very nearly to the cathedral type: would that its tower, choir, and transepts were worthy of it.

I think, then, we may fairly set down that a cross church, with the four ends of equal height, and a predominant central tower, with a clerestory, and high roof, and a regular western font, makes considerable approach in its external effect to the type of a minster. Of course, if the style be Perpendicular, the high roof is of less consequence, but we must then have pinnacles and rich parapets in lieu. But I know of no strictly parochial church which fully combines all these requirements: Yatton, Melton, Crewkerne, Ilminster, even Stafford and Brecon—minsters in rank—are merely approximations. I am not sufficiently acquainted with Trinity Church, Hull, and St. Mary's, Beverley, to say how far they realise the idea. But of churches which I have myself seen, the first in which I can recognise its complete development, is the comparatively small, but perfect and exquisite, minster of St. Cross.

Let us now consider how the types develope themselves in the interiors of churches; and here we shall find it advisable to pay more attention than we have yet done, in the course of this inquiry, to the historical sequence of the styles. For, in considering exteriors, we have been chiefly concerned with general outlines, on which difference of style has only an indirect influence; while within, the different forms of arcades, roofs, &c. are the points in which the styles necessarily exhibit some of their most immediate developments.

It always strikes me that there is something very monastic about the Norman style in general; the Early Gothic is less so, the Continuous least of all. In the two former there can hardly be said to be any distinct type of parochial architecture; the mass of parochial buildings belong to the merely picturesque class; where they get beyond this, it is generally by introducing some feature which directly approximates them to the minster. We have seen how the Perpendicular style was the first fully to develop the higher type of parish church as a distinct architectural creation. Hence in this latter era the cathedral and parochial types converge; the architectural parish church of this age comes nearer even to the old cathedral type than the earlier picturesque parish church; while at the same time the Perpendicular cathedral type actually approximates very considerably to that of the Perpendicular parish church.

Though the Norman style is the most monastic of any, yet it has something more like an architectural parochial type than the Early Gothic. This is to be seen in the short columns so common in our Norman churches; real columns I mean, as distinguished from circular piers. They rarely carry a clerestory, but occasionally do so, even without introducing any cathedral effect, as in St Peter's, Northampton. But when a more massive pier is employed, whether in the form of clusters, or of the vast circular masses I have just mentioned, and which may be distinguished from the real columnar pier by their round imposts,* we get some slight approximation to the minster type. The arcades alone often resemble cathedral arcades, but there is no general cathedral effect from the absence of the triforium and clerestory, or, still worse, from the addition of a later and inharmonious one. Such arcades or piers of Norman or Transitional character are found at Rothwell and Grendon, Northamptonshire, Stafford, Cricklade, and St. Nicholas, Gloucester. The clustered examples are indeed usually more slender than if they had to support a triforium and clerestory; but they approximate nearer to the cathedral type than the other.

When these massive piers actually support a clerestory, the general effect of a minster is very nearly attained, as at Towyn, Merionethshire. When the triforium is introduced, even if in so rude a form as in Chepstow Priory Church, the work is complete, as far at least as the side elevations are concerned.

But between the genuine column and the circular mass several intermediate degrees may be found. Thus, in the very fine nave of St. Wollos, at Newport, Monmouthshire, though there is a clerestory, and that supported on columns considerably thicker than those at St. Peter's, Northampton, the design is hardly less strictly parochial than the latter; but in Buildwas Abbey, though there is no triforium, we cannot but recognise the character of a minster, though imperfectly developed. With this, as far as the arcades go, we may perhaps rank Wimborne Minster; but the absence of an original clerestory at once puts it on a very inferior level.*

In the Early Gothic I observed that we had no distinct parochial type of external architectural effect. Within there is a little nearer approach to it, but it is extremely feeble; the low pier, even if it be slightly clustered, much more if it be round or octagonal, and the broad, often sprawling, arch which it supports, always seem to me about the meanest among the productions of ecclesiastical art. They are surely very inferior either to their Romanesque predecessors or their Continuous successors. I know of few or no Early Gothic interiors parallel to St. Peter's on the one hand or to the familiar Perpendicular type on the other. When they affect anything more they run off in various directions. Sometimes, as in St. Mary's, Haverfordwest, where we have the most elaborate series I know in any parish church, we find, as in the Norman examples, arcades which a slight addition of massiveness would render quite of a cathedral character, though the absence of a triforium and clerestory precludes any general cathedral effect. The arches of the choir at Dorchester are, taken alone, equal to any in England, and strike me as singularly like those in Exeter Cathedral; those in the choir at Stafford are very little, if any, inferior to them. The arcades and lantern arches of St. Mary's, Shrewsbury,—the former exhibiting a very remarkable form of round-arched Early English, like Polebrook and Barnack, in Northamptonshire, and Faringdon, Berkshire—come very near to the cathedral character, but we lack here also the triforium and clerestory.

With a clerestory, as in Norman, we have advanced a great step. Even so small a nave as that of Llanaber, in Merionethshire, where, however, the columnar piers give an effect rather Norman than Early English, rises far above the common parochial type. But certainly the grandest parochial nave of this style I know is at Berkeley; the arcades are magnificent; the triforium indeed is absent, and the clerestory is of inferior character, but a vault would at once bring it under the complete cathedral type, though not in a high state of development.

The nave and choir of Llandaff, as having neither triforium nor vault, may be so far classed with Berkeley, but the cathedral effect is much more fully developed. This is owing not only to the clerestory being in itself much better and more elaborate, but because it is better joined with the arcades in one architectural design. The string above the arcades, the shafts running up to the roof, make all the difference. These two features are the necessary marks of the vertical and horizontal divisions; and the improvement in point of finish which they effect is wonderful. Now these we hardly ever find in parochial buildings earlier than the Perpendicular period.

The choir of St. David's might rank with Llandaff, except that, though pointed work of the thirteenth century, its whole feeling is Romanesque, being doubtless closely imitated from its predecessor.

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One main reason why there is at this period a far greater gap between cathedral and parochial churches than either before or after is to be found in the fact that this is just the point where vaulting is most imperatively necessary. We know that in the Norman style a vault over a large space is scarcely ever found,—never, indeed, until we approach the period of transition; and it is not only scarcely ever found, but is ideally very much better away. In the Continuous Gothic again, though the vault is continually found, and is always desirable to the complete perfection of the style, yet its absence is of comparatively little consequence on account of the noble substitute provided in the elaborate timber roof of low pitch or of a cradle form. But in the intermediate stage, the Early Gothic, the vault is both more necessary than at any other time, and has no such substitute provided; the choice is between vaulting on the one hand, and, on the other, either utter bareness and meagreness, or else, as at Llandaff and Romsey, some form which is better in harmony with the requirements of an earlier or a subsequent period. Now, every one knows that one of the greatest defects in our national architecture is, that the vault is so extremely rare in parochial buildings. And it is no more common at this period, when it is most wanted, than at any other; indeed, it is still rarer than before or after. Hence the ordinary presence of the vaulted roof in minsters, and its ordinary absence in smaller churches, is more acutely felt as a marked distinction at this period than at any other.

We now come to the mode in which the distinction was effected, or rather, to a great extent, ceased to be effected, in the days of the Continuous Gothic; in the days when our parochial architecture was brought to the zenith of its perfection at Wrington and Banwell and Wells and Yatton, and when the builders of our greater churches produced every conceivable development of their own idea, from the unrivalled majesty of Winchester to the fantastic poverty of Gloucester. Now, my main position is, that at this period the two types of the minster and the parish church began, to a great extent, to converge. But I may be excused from enlarging on this point so much as I otherwise might, because I have, on the one hand, stated my view, succinctly, but I hope sufficiently, in my History of Architecture†; and, on the other, I am at present engaged in working it out in detail for the Archæological Society of the county where the question must be principally studied. And if I can by this means induce any member of the society to study for himself those matchless churches of Somerset, I shall feel well pleased.

It certainly seems to me that there is now no essential difference between the two types of interiors. I suppose it will be granted me that St. Mary Redcliffe is to be considered as a minster in every respect, except the unhappy position of its steeple. But I also think that no one can fail to recognise that this magnificent building belongs essentially to the same class as the great parish churches of the county. Besides a certain increase in elaboration of work, the main difference consists in the presence of a stone roof, and the greater massiveness consequently given to the piers. These, it may be said, are considerable changes; but I do not know of any Early Gothic parish church which so simple a process could transform into the likeness of Ely or Lincoln. And every one must feel that the general notion of Redcliffe is completely identical with that of Wrington, or Yatton, or St. Stephen's in its own city. The great size of the clerestory is an individual peculiarity which it shares with Bath and a few other churches, but which is in no way essential to the notion of a Perpendicular minster, as may be seen by the notable instances of Canterbury and Winchester.

I say that the two types now *converge;* the parish church, with its fully developed clerestory and its marked horizontal and vertical divisions, approaches to the character of a minster; on the other hand, the minster, now that the triforium is banished, and the vault rendered less necessary, does not stand so much distinguished as before from the parish church. I do not put the nave of St. Mary's (Oxford) on a level with that of Winchester or Canterbury, but I think that few minsters of the second order would be entitled to despise it as one of their component parts. And this, although, like Taunton, it has not the same strong vertical lines as Yatton and Redcliffe. I think one cannot help feeling that St. Mary's, as a whole, is too large for its type, that it ought to have been a cross church, with a central tower and the other cathedral accompaniments; but were such the case, though objections might possibly be taken to the simple aisleless choir, I do not think any one could reasonably deny the nave to be fully worthy of its destination.

I hold, then, that, while in the Early Gothic, the distinction is by far the most marked in the interior elevation of churches, in the Continuous it is almost entirely confined to outline and ground-plan, that is, to the full development of the cross form. Internally there is only one specific type; with this qualification, that vaulting is almost an improvement, and that, where it is used, a less slender form of pier is necessary than that which is commonly found in the best Perpendicular parish churches.

I have thus endeavoured to point out some of the external points in which the difference between the two types of church exhibits itself. But I cannot help thinking that there is, beyond all this, something deeper, which, as I before said, I can recognize, but cannot define; something like what we use to call an ἦθος, the exact nature of which I should be well pleased if some more metaphysical inquirer than myself should succeed in clearly explaining.

We have seen throughout that the approaches to a cathedral character in our parish churches are but few and feeble. Individual features we have seen not unfrequently occur which might have found their appropriate place in a minster, but the complete general effect we have found only in the individual case of St. Mary Redcliffe. And even there the transept aisles, the lady chapel, the magnificent vista of the nave and choir, are, to a certain extent, balanced by the deplorable misplacement of the tower, at once robbing the church of central lantern and western façade. But, on the other hand, it is by no means uncommon to find the case reversed, to find the abbey or the cathedral imitating the parish church. I have already alluded to this subject in connection with the fact that the collegiate churches of Northamptonshire do not architecturally differ from merely parochial structures; and since then I have worked the question out more at length when tracing the history of the most remarkable instance of the phenomenon, the extraordinary cathedral at Llandaff.* Still I cannot refrain from calling attention to a few of the most conspicuous cases. Now nearly all our cathedrals exhibit the cross form in its most perfect state; but conventual and collegiate churches often depart from the general type. This is doubtless to be accounted for by the circumstance that many of the former, and a great majority of the latter, were also parochial: still it is a remarkable fact, as one would certainly have expected to find the inferior use yield to the more dignified. One would not, indeed, expect to find every lord of a manor who founded a college of priests for the more solemn performance of divine service in his parish church, to reconstruct the fabric on a cathedral scale; still less could we look for such a change from the not usually very wealthy chapters of such foundations. But it is surprising to find churches which have been seats of more ancient convents and colleges, and have been rebuilt on a vast scale and with no lack of ornament, retaining the inferior form. It was not want of funds which caused Dorchester to retain the meanest parochial type; its vast length is unbroken by tower or transept, and its unsurpassable arcades support neither triforium, clerestory, nor vault. Yet the size of the church, the wonderful beauty of detail, and the lavish expenditure of ornament, preclude all idea of its deficiencies or anomalies originating in inability or unwillingness in point of expense. The like may be said of Manchester Cathedral, for several centuries the seat of a wealthy chapter, and a large and noble church, yet not even cruciform. Smaller collegiate churches might be adduced to an interminable extent. * * *

EDWARD A. FREEMAN.

* History of Architecture, p. 365.
† Page 388.

* Llandaff Cathedral, pp. 5-10.

THE HOLMFIRTH AND OTHER DEFECTIVE RESERVOIRS.

THE reservoir at Holmfirth, the giving way of which we noticed in our last, has been in a dangerous state for years. In many other places equal risk is being run.

We are not displeased to find that something like effectual alarm is being excited in various quarters, though, in all probability, not in those places where alarm and close investigation ought to lead to instant measures for security of life and property.

A correspondent of the *Stockport Advertiser*, while warning the inhabitants of the district from the Manchester reservoirs along the valley of the Mersey, by Stockport, of the risk, and cautioning them to look to the security of their reservoirs, says, "Are the owners of our large mills, and our corporation authorities, aware that some doubts exist in high quarters as to the safety of the Woodhead reservoir? Is it not the duty of our authorities to make instant inquiry on the spot? I am no alarmist, but, for Heaven's sake, if there be any doubt as to the safety of our lives and property, let these doubts be set at rest."

Such is the feeling and determination which ought to be excited throughout the country wherever there are reservoirs storing water for descent, whether through gorges, valleys, aqueducts,* or pipes, and it will be some consolation for the losses already sustained, if future fatalities be thereby prevented by prompt and efficient measures, however costly.

APOTHEGMS.

IN your instructive periodical of the 14th, I find a good-humoured and well-versified answer to my apothegm on architecture, and submit the following to "P. De T.:"—

If "P. De T." would keep upon the earth,
And be sincere, nor write in harmless mirth,
He'd find A. P. is right about the "air"—
Does he build other*where?* Echo cries *Where?*

CORRECTED APOTHEGM.

The Architect, who with artistic eye
Rears mighty structures, massive, grand, and high,
Leaves to the world the genius of his mind,
And is a benefactor of mankind!"

Allow me to submit one

ADDITIONAL APOTHEGM ON EPITAPHS.

If all the epitaphs of fond regard
Be true, we read in every lone churchyard,
How bad the living are; how good who die!
Alas! too many { rest / lie } beneath a lie!

A. P.

* On Sunday week, an aqueduct which carries the river Roch across the front of the Littleborough tunnel of the Lancashire and Yorkshire Railway, immediately over the line, burst, owing to the great accumulation of water from rain during the night, and inundated the line, so as to prevent several of the morning trains from passing along it. A deep cutting of the line there was converted into a watercourse. Fortunately, the tunnel there having a rising gradient under the hills into Yorkshire, the water took an opposite direction, and the damage was easily repaired. A great number of excavators were set to work to cut a new channel by the side of the line for the river, and, before night, one line of rail was entirely restored to working order.

less churches than in most of those which might formally rank immediately above them, cross churches, namely, with aisles. Certainly, no form better combines simplicity, regularity, and picturesque effect than that of Stanley and Llanbadarn; and its very simplicity prevents the admission of any positively opposite element. Whereas, when there are aisles, the aisles may be treated, inside or out, in a purely parochial way, or some irregularity may be introduced which may make them depart farther from the type of the minster than the smaller buildings. Thus, at Purton and Cheltenham, as I before said, there is a picturesque grouping of gables and distinct roofs, unsuited to the cross form: at Cricklade, notwithstanding some exceedingly noble individual features, there is a general irregularity, which is highly displeasing. I certainly think that every cross church with aisles ought to have a clerestory, if only to avoid the junction of the aisle and transept roofs, which is not agreeable on so large a scale.

Now when this clerestory is combined with a high roof, we have gained, in external effect at least, another very important step towards the cathedral effect. In common parish churches we generally have to choose between a clerestory and a high roof, the height being not sufficient to allow of both. When both are united there is an appearance of general bulk, which is highly effective. This may be seen very eminently in the Priory Church at Brecon,—I suppose the grandest existing church in Wales, after St. David's and Llandaff, and which ought to be the cathedral of a new diocese. This church is a great advance upon Llandabarn; besides the nave aisles, though there are no regular aisles to the choir, there is a rather complicated arrangement of chapels, and the choir, a splendid specimen of the pure Lancet style, has been designed for vaulting. It comes very near to the character of a minster, but has not quite attained it. Even at Shiffnal, the union of the high roof and clerestory, though the latter is so small that it is not even pierced, produces a sort of solemn and quasi-monastic effect, quite beyond the common run of parochial cross churches. We see the same union in Wimborne Minster; but this church, on the one hand, has other cathedral features; on the other, the choir clerestory is insignificant;* while that of the nave, with its square-headed windows, is of an eminently parochial character, and very inferior to the beautiful one at Brecon.

Another very great point, and one even more rarely secured than the high roof and clerestory, is to have a genuine west front, forming a real architectural composition. Every one must have seen how often in churches, even of very considerable pretensions, which have a central tower, the west front seems to be in a manner left to itself, not made to form any architectural design. This is conspicuous in Shiffnal Church; in St. Giles, Northampton; and even in so large and sumptuous a church as St. Mary's, Stafford, where no care or ornament whatever is bestowed upon the west front: even one of the aisles is left without any western window. Felmersham, in Bedfordshire, figured in Mr. Petit's "Architectural Character," is a grand example to the contrary, as far as concerns the nave, whose termination is sumptuously arcaded; but even here the ends of the aisles are left quite bare. So at Berkeley, the west end of the nave is a most noble Lancet composition, but it is ruined by the beggarly terminations of the aisles of rather later date. Replace the nave gable, and build a pair of western towers, and this front would rival Llandaff; but at present it is not a satisfactory whole. At Melton Mowbray a very fair Decorated front is spoiled by the addition of a magnificent western porch.

Very different is the case with the two noble churches of Yatton and Crewkerne, in Somersetshire. I will not enter into any minute criticisms upon them, having recently done so before the Archæological Society of their own county; but I may say that here we have real architectural designs, worthy of forming part of a cathedral or abbey. Crewkerne front is very like that of Bath, but incomparably finer. That of Yatton I selected as the frontispiece to my "History of Architecture;" and I may mention that Mr. Jewitt and I, between us, though by far the greater share of blame rests with myself, have contrived to convert the hexagonal turrets into octagonal ones.

The whole nave of Yatton, externally at least, may be considered as approaching very nearly to the cathedral type: would that its tower, choir, and transepts were worthy of it.

I think, then, we may fairly set down that a cross church, with the four ends of equal height, and a predominant central tower, with a clerestory, and high roof, and a regular western font, makes considerable approach in its external effect to the type of a minster. Of course, if the style be Perpendicular, the high roof is of less consequence, but we must then have pinnacles and rich parapets in lieu. But I know of no strictly parochial church which fully combines all these requirements: Yatton, Melton, Crewkerne, Ilminster, even Stafford and Brecon—minsters in rank—are merely approximations. I am not sufficiently acquainted with Trinity Church, Hull, and St. Mary's, Beverley, to say how far they realise the idea. But of churches which I have myself seen, the first in which I can recognise its complete development, is the comparatively small, but perfect and exquisite, minster of St. Cross.

Let us now consider how the types develope themselves in the interiors of churches; and here we shall find it advisable to pay more attention than we have yet done, in the course of this inquiry, to the historical sequence of the styles. For, in considering exteriors, we have been chiefly concerned with general outlines, on which difference of style has only an indirect influence; while within, the different forms of arcades, roofs, &c. are the points in which the styles necessarily exhibit some of their most immediate developments.

It always strikes me that there is something very monastic about the Norman style in general; the Early Gothic is less so, the Continuous least of all. In the two former there can hardly be said to be any distinct type of parochial architecture; the mass of parochial buildings belong to the merely picturesque class; where they get beyond this, it is generally by introducing some feature which directly approximates them to the minster. We have seen how the Perpendicular style was the first fully to develop the higher type of parish church as a distinct architectural creation. Hence in this latter era the cathedral and parochial types converge; the architectural parish church of this age comes nearer even to the old cathedral type than the earlier picturesque parish church; while at the same time the Perpendicular cathedral type actually approximates very considerably to that of the Perpendicular parish church.

Though the Norman style is the most monastic of any, yet it has something more like an architectural parochial type than the Early Gothic. This is to be seen in the short columns so common in our Norman churches; real columns I mean, as distinguished from circular piers. They rarely carry a clerestory, but occasionally do so, even without introducing any cathedral effect, as in St Peter's, Northampton. But when a more massive pier is employed, whether in the form of clusters, or of the vast circular masses I have just mentioned, and which may be distinguished from the real columnar pier by their round imposts,* we get some slight approximation to the minster type. The arcades alone often resemble cathedral arcades, but there is no general cathedral effect from the absence of the triforium and clerestory, or, still worse, from the addition of a later and inharmonious one. Such arcades or piers of Norman or Transitional character are found at Rothwell and Grendon, Northamptonshire, Stafford, Cricklade, and St. Nicholas, Gloucester. The clustered examples are indeed usually more slender than if they had to support a triforium and clerestory; but they approximate nearer to the cathedral type than the other.

When these massive piers actually support a clerestory, the general effect of a minster is very nearly attained, as at Towyn, Merionethshire. When the triforium is introduced, even if in so rude a form as in Chepstow Priory Church, the work is complete, as far at least as the side elevations are concerned.

But between the genuine column and the circular mass several intermediate degrees may be found. Thus, in the very fine nave of St. Wollos, at Newport, Monmouthshire, though there is a clerestory, and that supported on columns considerably thicker than those at St. Peter's, Northampton, the design is hardly less strictly parochial than the latter; but in Buildwas Abbey, though there is no triforium, we cannot but recognise the character of a minster, though imperfectly developed. With this, as far as the arcades go, we may perhaps rank Wimborne Minster; but the absence of an original clerestory at once puts it on a very inferior level.*

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I hold, then, that, while in the Early Gothic, the distinction is by far the most marked in the interior elevation of churches, in the Continuous it is almost entirely confined to outline and ground-plan, that is, to the full development of the cross form. Internally there is only one specific type; with this qualification, that vaulting is almost an improvement, and that, where it is used, a less slender form of pier is necessary than that which is commonly found in the best Perpendicular parish churches.

I have thus endeavoured to point out some of the external points in which the difference between the two types of church exhibits itself. But I cannot help thinking that there is, beyond all this, something deeper, which, as I before said, I can recognize, but cannot define; something like what we use to call an ἦθος, the exact nature of which I should be well pleased if some more metaphysical inquirer than myself should succeed in clearly explaining.

We have seen throughout that the approaches to a cathedral character in our parish churches are but few and feeble. Individual features we have seen not unfrequently occur which might have found their appropriate place in a minster, but the complete general effect we have found only in the individual case of St. Mary Redcliffe. And even there the transept aisles, the lady chapel, the magnificent vista of the nave and choir, are, to a certain extent, balanced by the deplorable misplacement of the tower, at once robbing the church of central lantern and western façade. But, on the other hand, it is by no means uncommon to find the case reversed, to find the abbey or the cathedral imitating the parish church. I have already alluded to this subject in connection with the fact that the collegiate churches of Northamptonshire do not architecturally differ from merely parochial structures; and since then I have worked the question out more at length when tracing the history of the most remarkable instance of the phenomenon, the extraordinary cathedral at Llandaff.* Still I cannot refrain from calling attention to a few of the most conspicuous cases. Now nearly all our cathedrals exhibit the cross form in its most perfect state; but conventual and collegiate churches often depart from the general type. This is doubtless to be accounted for by the circumstance that many of the former, and a great majority of the latter, were also parochial: still it is a remarkable fact, as one would certainly have expected to find the inferior use yield to the more dignified. One would not, indeed, expect to find every lord of a manor who founded a college of priests for the more solemn performance of divine service in his parish church, to reconstruct the fabric on a cathedral scale; still less could we look for such a change from the not usually very wealthy chapters of such foundations. But it is surprising to find churches which have been seats of more ancient convents and colleges, and have been rebuilt on a vast scale and with no lack of ornament, retaining the inferior form. It was not want of funds which caused Dorchester to retain the meanest parochial type; its vast length is unbroken by tower or transept, and its unsurpassable arcades support neither triforium, clerestory, nor vault. Yet the size of the church, the wonderful beauty of detail, and the lavish expenditure of ornament, preclude all idea of its deficiencies or anomalies originating in inability or unwillingness in point of expense. The like may be said of Manchester Cathedral, for several centuries the seat of a wealthy chapter, and a large and noble church, yet not even cruciform. Smaller collegiate churches might be adduced to an interminable extent. * * *

EDWARD A. FREEMAN.

* History of Architecture, p. 365.
† Page 389.

* Llandaff Cathedral, pp. 5-10.

THE HOLMFIRTH AND OTHER DEFECTIVE RESERVOIRS.

THE reservoir at Holmfirth, the giving way of which we noticed in our last, has been in a dangerous state for years. In many other places equal risk is being run.

We are not displeased to find that something like effectual alarm is being excited in various quarters, though, in all probability, not in those places where alarm and close investigation ought to lead to instant measures for security of life and property.

A correspondent of the *Stockport Advertiser*, while warning the inhabitants of the district from the Manchester reservoirs along the valley of the Mersey, by Stockport, of the risk, and cautioning them to look to the security of their reservoirs, says, "Are the owners of our large mills, and our corporation authorities, aware that some doubts exist in high quarters as to the safety of the Woodhead reservoir? Is it not the duty of our authorities to make instant inquiry on the spot? I am no alarmist, but, for Heaven's sake, if there be any doubt as to the safety of our lives and property, let these doubts be set at rest."

Such is the feeling and determination which ought to be excited throughout the country wherever there are reservoirs storing water for descent, whether through gorges, valleys, aqueducts,* or pipes, and it will be some consolation for the losses already sustained, if future fatalities be thereby prevented by prompt and efficient measures, however costly.

APOTHEGMS.

IN your instructive periodical of the 14th, I find a good-humoured and well-versified answer to my apothegm on architecture, and submit the following to "P. De T.:"—

If "P. De T." would keep upon the earth,
And be sincere, nor write in harmless mirth,
He'd find A. P. is right about the "air"—
Does he build other*where?* Echo cries *Where?*

CORRECTED APOTHEGM.

The Architect, who with artistic eye
Rears mighty structures, massive, grand, and high,
Leaves to the world the genius of his mind,
And is a benefactor of mankind!"

Allow me to submit one

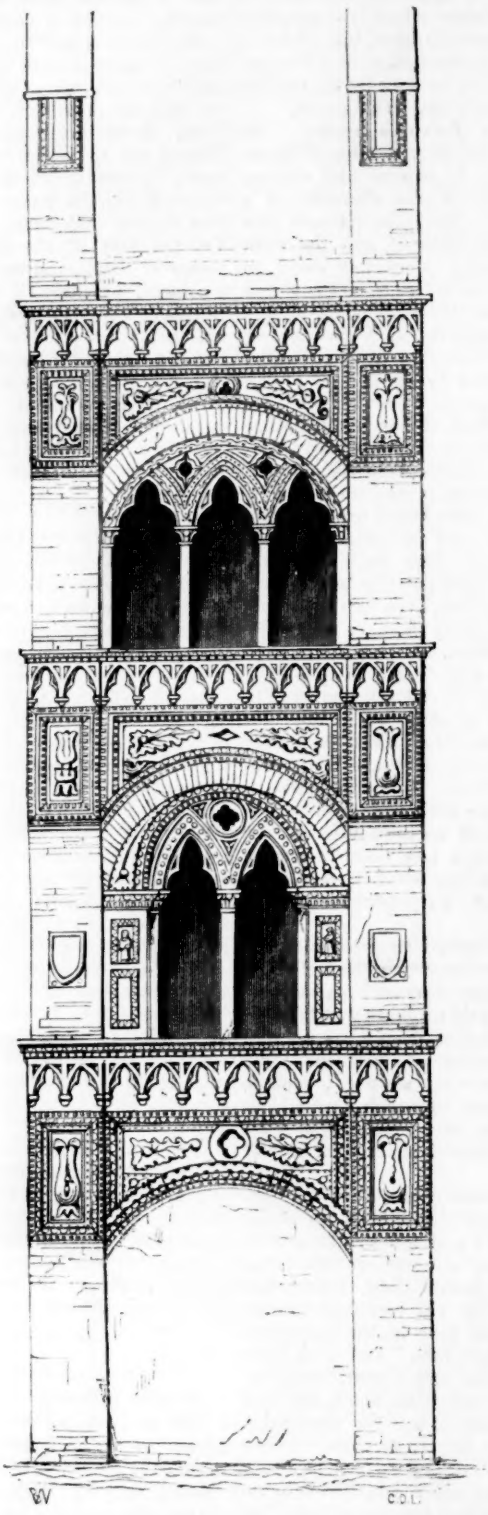
ADDITIONAL APOTHEGM ON EPITAPHS.

If all the epitaphs of fond regard
Be true, we read in every lone churchyard,
How bad the living are; how good who die!
Alas! too many {rest / lie} beneath a lie!

A. P.

* On Sunday week, an aqueduct which carries the river Roch across the front of the Littleborough tunnel of the Lancashire and Yorkshire Railway, immediately over the line, burst, owing to the great accumulation of water from rain during the night, and inundated the line, so as to prevent several of the morning trains from passing along it. A deep cutting of the line there was converted into a watercourse. Fortunately, the tunnel there having a rising gradient under the hills into Yorkshire, the water took an opposite direction, and the damage was easily repaired. A great number of excavators were set to work to cut a new channel by the side of the line for the river, and, before night, one line of rail was entirely restored to working order.

TERRA COTTA FRONT, PISA.



TERRA COTTA FRONT, PISA.

This drawing illustrates a palace on the Lung' Arno, Pisa. The front is of terra cotta, and in four compartments, the one drawn being the most perfect. It is of a Romanesque Gothic character, and is now used as an ordinary dwelling-house.

NOTES IN THE PROVINCES.

Windsor.—The painting and decorations of the Court-room of the Town-hall are now nearly completed, according to the local *Express*, and the portraits have been arranged in something like uniformity on the walls. Empty spaces by the side of the Recorder's seat will shortly be filled by full-length portraits of Queen Victoria and her royal Consort.

Brentwood.—The Grammar school foundation, after twenty-five years' litigation in the Court of Chancery, at an enormous expense, is now made available for the education of the youth of the district. The old school-house has been repaired, and will be used until the new schools, which will be on an extensive scale, are erected: these will be arranged to accommodate from five to six hundred boys.

Frocester.—The church has been rebuilt with the exception of portions of the chancel, viz. the east and north walls, which are patched up, and pointed. The church consists of a nave, with south porch, a north aisle and a chapel, a tower, with a spire, on the north side, and a chancel. The north aisle has been lengthened westwards, and this aisle is separated from the nave by circular pillars supporting two centered arches. The sittings are all open and low, having carved bench ends and moulded capping. The floor of the church, except the chancel, is laid with black and red tiles, in pattern. The roofs are covered with stone tile. The dimensions of the church are, nave, 58 feet by 15 feet; north aisle and chapel, 76 feet 6 inches by 13 feet 6 inches; chancel, 23 feet 6 inches by 15 feet; south porch, 8 feet 6 inches by 8 feet 6 inches; tower, 9 feet by 9 feet. Mr. Niblett was the architect; Messrs. Coleman, the carpenters, and Messrs. Wall and Hook, the masons.

Upton-on-Severn.—The late floods have done some good it seems by washing away Upton bridge,—a vexatious impediment to the improved navigation of the Severn.

Birmingham.—The governors of the free grammar school of King Edward the Sixth have lately erected a fourth branch school, in Bath-row. The building, which will accommodate 150 boys and an equal number of girls, was erected by Messrs. Branson and Gwyther, from the designs of Mr. J. L. Hornblower, at a cost of upwards of 2,000*l.* and will, it is expected, be opened early in March.

Shirley.—New schools have been erected in connection with the church. The building is in the Perpendicular style, from plans supplied by Mr. A. E. Perkins, architect to the Dean and Chapter of Worcester, and erected under the contract of Mr. G. Madeley, of Solihull.

Wellington.—The ceremony of turning the first sod of the Wellington Water Works took place on the 6th instant. The site of the works is at the foot of the Wrekin. The reservoir will cover a space of eight acres: it will be 150 feet above the level of the Wellington Market-place, and will hold 15,000,000 gallons of water, being more than sufficient to supply the town for six months.

Wolverhampton.—The report of Mr. Ewan Christian, architect to the Ecclesiastical Commissioners, on the Collegiate Church of St. Peter, Wolverhampton, describing its present dilapidated and wasting condition, and the measures to be taken for its restoration and substantial repair, has just been printed for circulation. It appears from this report that the total charge for repair and restoration will be—for repair of masonry and for drainage, 3,337*l.*; repair and renewal of roofs, 2,000*l.*; re-glazing, 193*l.*; contingencies, 470*l.*; total, 6,000*l.* Of this sum, the Ecclesiastical Commissioners have promised to contribute 3,000*l.* provided the remaining funds needed are raised by private subscription, and without delay.

Newark.—It is proposed to repew the church of St. Mary, at a cost of 4,000*l.* to 5,000*l.* upwards of 1,200*l.* of which have been subscribed, and 1,000*l.* more are in the hands of the vicar. A premium, it is said, will be offered for the best plan, to be decided on by a committee to be appointed for that purpose.

Laceby.—The Wesleyans of Laceby, near Grimsby, are about to erect a large chapel, in the Gothic style of architecture, in that village. The tenders of the Messrs. Johnson, of Laceby, and of Mr. William Shepherd and Mr. William Pybus, of Caistor, for the execution of the work, have been accepted.

Sunderland.—A new building has been commenced in Lambton-street, Sunderland, to be called the Lyceum Hall. It is to comprise seventeen rooms, adapted as offices, committee-rooms, &c. and a hall 90 feet by 48 feet, capable of holding 1,800 persons, being the largest in Sunderland. Besides this, there will be two others on the ground floor, capable of holding 500 or 600 persons. The whole is to be ventilated and heated by a hot-water apparatus. The building is expected to be completed in July next.

Edinburgh.—The laying of water pipes leading into and out from the reservoir just erected on the Castle-hill has been completed and the water admitted. The reservoir is calculated to hold about 1,700,000 gallons of water, and it is fitted up with numerous pipes leading directly from the sources, and others distributing it arterially throughout the town, while an overflow pipe will render any excess of water useful in flushing the sewers. A large water tank of iron is now also almost completed within the Castle, near the Mons Meg Battery. The exterior of the tank somewhat appropriately resembles a castellated tower.

Glasgow.—The Commissioners of Woods and Forests have ordered the removal of the galleries in the Cathedral. The floor of the choir is used as the place of worship, and is capable of being reseated in the Presbyterian manner: by the removal of the gallery stairs and other fixtures, an unbroken view will be

obtained from west to east of the aisles and colonnade.

Elgin.—The episcopal chapel here, according to the *Elgin Courant*, is to be rebuilt on the site of the present chapel in North-street. The design of the new edifice has been furnished by Messrs. Mackenzie and Matthews, of Elgin, architects.——The same paper announces the discovery of rich lead ore in large quantity at a village called Stotfield, the property of Colonel Brander, of Pitgaveny, near Lossiemouth. The mines are already let to residents in London connected with similar speculations in the Isle of Man. Lead appears in various quarters throughout Scotland. We happen personally to recollect that many years since—probably nearly forty—rich lead ore was discovered in a field near "The Hills," at Inverkeithing, in Fifeshire.

IRON GATES IN THE MUSEUM AT ROUEN.

THESE curious gates, which are ascribed to the twelfth century, were formerly in the cathedral of Rouen, whence they have been removed to the museum.

A and B are sections half size of the plinth and moulding above it.

Rouen, like most of the French cities, possesses a museum containing an interesting collection of local and national antiquities. Alas! that the British Museum should still continue deficient in this most important branch: how much longer shall we tacitly acknowledge that, of the works of all ages and nations, those of our own forefathers are alone unworthy of a resting-place in our national museum?

J. G. H.

MARGATE LANDING PIER COMPETITION.

THERE were several sets of plans forwarded to the directors of the Harbour and Pier Company for this work, furnished by Messrs. Mitchell and Saunders, Mr. J. B. Crampton, and Messrs. Fox and Henderson, Capt. Moorsom, Mr. J. B. Redman, Mr. A. Giles, Mr. Tress, Messrs. Birch, Mr. Law, Mr. Scott, and others. The directors, assisted by their surveyor, met to consider these plans for three successive days, and ultimately decided upon adopting the design of Messrs. Birch.

The proposed structure is to be a high-water pier, 25 feet in width, and constructed entirely of iron, except the roadway planking. The directors have it in contemplation to extend the pier further seaward than the present low-water jetty, which is nearly 1,200 feet in length. The pier will be approached from either side of the Droit House. There will be a spacious head for vessels to come alongside, with a lighthouse, and the requisite landing places, inclined plane, cranes, &c. for the landing of passengers, goods, cattle, &c.

STAINED GLASS WINDOW, SAINT STEPHEN'S, WALBROOK.

THROUGH the liberality of the Grocers' Company, patrons of the living, the large east window of St. Stephen's, Walbrook, has been filled with stained glass by Mr. Willement, under the direction of the Company's architect, Mr. Gwilt. It is a "Venetian Window," of three lights. The centre opening contains two subjects in frames from the life of St. Stephen (the "Stoning," of course); and in the side-lights are medallions of the Evangelists with others containing their emblems. At the summit is the head of the Saviour with an angel on either side, less successfully executed than the other figures. The ornaments in the enclosing frames have been vulgarised by sash doors and fanlights. The cost, it is said, will be little short of 500*l.*

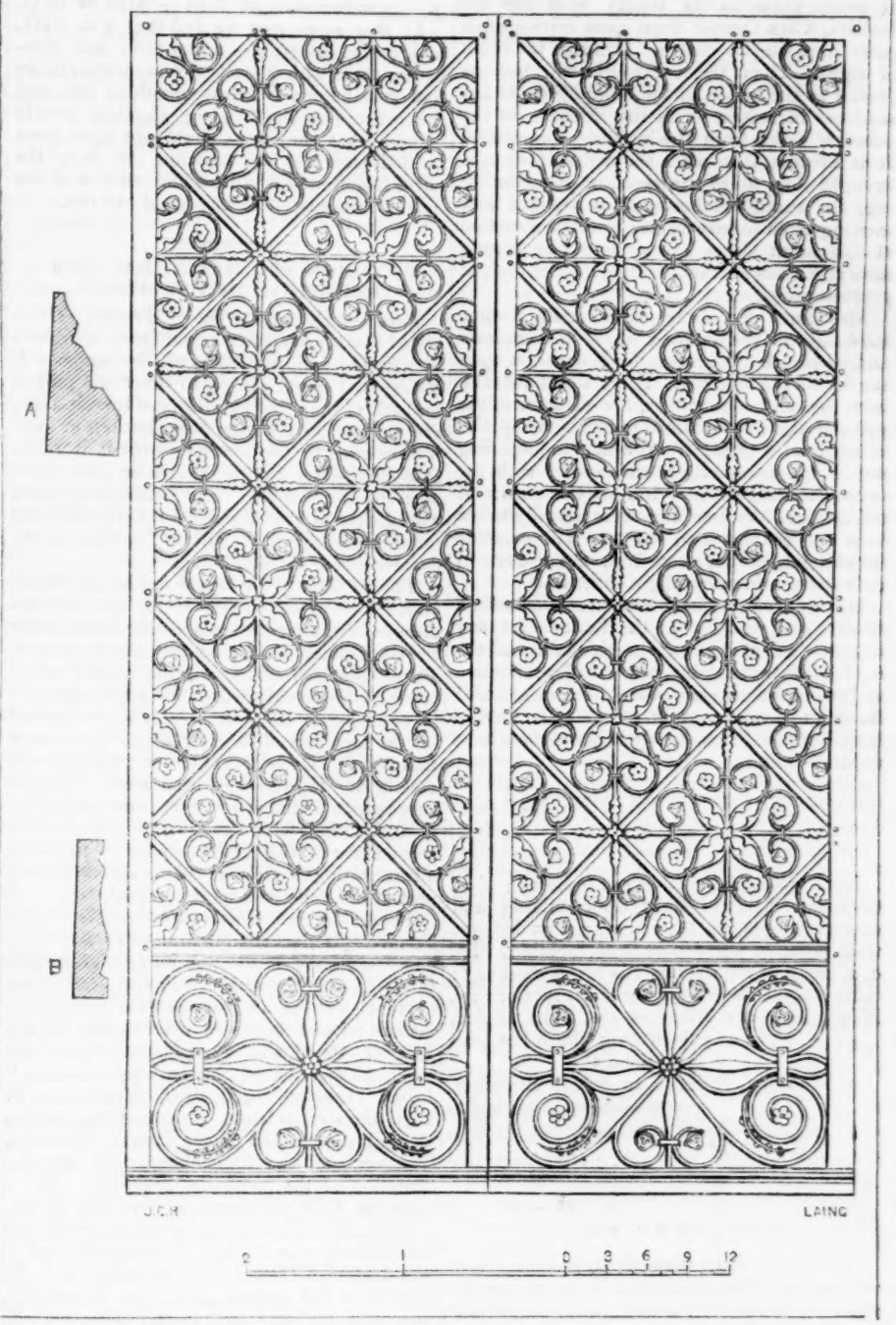
Great praise is due to the Grocers' Company for setting so good an example. It is to be hoped it will be followed by the other great city companies who have it in their power to do so much for art and artists, and for the most part do so little. As the writer has said elsewhere,—"The surplus revenues of a club or city company could not be better expended than in portraying for imitation a noble action or elevated feeling in the language of all lands,—the language of the painter;—teaching the beholder to regard his fellows with love, by that exposition of the human heart which a great painter equally with a great poet, can make;—or setting up in marble, memorials of their good and great men, and so shaming vice by doing honour to virtue." Our artists need such opportunities and such incitements. The cost of one civic banquet (we have no objection to a banquet either), might be made to produce a work which would advance the best interests of society, and long remain a monument to those who thus applied it.

The church, restored some time since, it will be remembered, under the direction of Mr. Turner, has also been lighted with gas, and the old chandeliers, suspended at the four angles of the dome, have been made available for this purpose. It is to be regretted that the burners are made into *sham* wax candles.*

DUBLIN SCHOOL OF DESIGN.—The Lord Lieutenant distributed the prizes to the pupils of this School at a soirée, which took place on Saturday in week before last. His Excellency described the result of the experiment of opening such a school twelve months since as already very encouraging.

* A plan and view of the church, with some curious particulars, will be found in our Vol. IX. p. 9.

IRON GATES IN THE MUSEUM AT ROUEN.



THE CURVED LINES OF GREEK ARCHITECTURE.

IN reading over the leading article in THE BUILDER of the 7th inst. some thoughts occurred to me, which, as they bear upon an interesting subject, may themselves be interesting.

Dr. Emil Braun's suggestion, that the horizontal lines in the Grecian buildings were made to correspond with the sea horizon, seems to me a very natural mode of accounting for the curvature; and would produce the hyperbola which Mr. Penrose has determined to be the curve actually employed. Of course this will not account for curvature in buildings from which the sea is invisible. If these are curved, which they may be for anything I know to the contrary, there is no difficulty in supposing that the Grecian architects, having found that the curve produced a pleasing effect, may have employed it in buildings where the original cause of curvature did not exist.

It must be an interesting problem to architects to determine whether the suggestion of Dr. Braun be correct or not; and I hope to be able to show that it is one that many of them must have the necessary data for solving, and therefore it is probably not too much to expect that this question will be set at rest at once and for ever.

Let us assume the curvature to have been produced by making the building correspond at every point in its length with the sea horizon, when viewed from some certain fixed point opposite its centre. Call this the point of sight. Then the curvature will become greater as the height of the building above the sea-level increases, or as the distance of the point of sight from the building diminishes. It is evident that when the point of sight is brought close up to the face line of the building, the curve will become two straight lines meeting at an obtuse angle; and the elevation of this point above the straight line joining the extremities of the building is the limit of greatest curvature.

This limit can always be ascertained when the height of the building above the sea-level and its length are known, for it depends upon the dip of the horizon. From this limit, and from the actual curvature, the distance of the point of sight is obtained; that is to say, the distance of a point from which the building would appear exactly to correspond with the sea horizon at its centre and its two ends. If the levels of the building were actually taken from the sea horizon, the two will coincide throughout, if they were not, the chance of their doing so is very slight indeed.

It is unnecessary here to enter on the method of obtaining the dip of the horizon for any height. All nautical works give tables of the dip for different heights, corrected for refraction and ready for use; nor will it be disputed that the depression of any point below the level of the point of sight is exactly in proportion to its distance from it.

Let a' = half the length of building; x' = distance of point of sight from building (and suppose it opposite the centre); y' = distance from point of sight to ends of building. Let a, x, and y = the depressions corresponding to these lengths respectively; then $a : x :: y : a' : x' : y'$. Now, since the triangles are right angled,

$y'^2 - x'^2 = a'^2$ substituting the other proportionals

$y^2 - x^2 = a^2$, let b = actual curvature, equal difference of y and x.

$y - x = b$ divide the preceding by this.

$y + x = \frac{a^2}{b}$ subtract the former

$$2x = \frac{a^2}{b} - b \therefore x = \frac{a^2 - b^2}{2b}.$$

This is the depression of the building at its centre, and this subtracted from the greater depressions of every other point will give the curvature at these parts.

x' is now easily obtained from the equation $x' = \frac{a'x}{a}$. Having now obtained the distance of the point of sight, we can easily find the length of the line from it to any given point, m, in the building. Let p' = length, then p = depression, and $x - p$ = curvature at m, which being compared with the actual curvature, will show whether the real and the supposed curvature be identical.

Let us take an example. A building, 100 feet long, is placed at an elevation of 140 feet above the sea; actual curvature, at 15 feet from centre = ·0064; at 25 feet, ·0154; at the ends, ·0433 = b.

In this case the dip of the horizon is 11′ 39″, which gives in 50 feet length ·1696 depression = a. Then,—

$$x = \frac{\cdot1696^2 - \cdot0433^2}{2 \times \cdot0433} = \cdot3105 = \text{depression on length } x'.$$

$$x' = \frac{50 \times \cdot3105}{\cdot1696} = 91\cdot6 = \text{length of point of sight from building.}$$

Now, let m and n = 15 and 25, the distances of the two intermediate points from the centre, and p' and q' their distances from the point of sight, and p and q the depressions proportional to these lengths:—

$$p' = \sqrt{x'^2 + m^2} = \sqrt{91\cdot6^2 + 15^2} = 92\cdot82.$$

$$p = \frac{x\,p'}{x'} = \frac{\cdot3105 \times 92\cdot82}{91\cdot6} = \cdot3146.$$

$p - x$ = curvature = ·3146 − ·3104 = ·0041.

In this same way we find that q = ·3218, and, consequently, $q - x$ = ·0113; and comparing these with the actual measurements, we find that the one is about one-third less, and the other one-fourth less; showing clearly enough that the curve could not have been formed from the sea horizon. In fact, the curve given would correspond with it if the height be supposed 20 instead of 140 feet.

R. R.

FOREIGN ARCHITECTURAL AND ARTISTICAL INTELLIGENCE.

Paris. — Monumentation of France. — It is stated that an extensive commission, composed of painters and sculptors, will be nominated. Its especial object will be to select and project for each of the principal towns of the republic, the subject for a statue, bust, picture, or portrait relative to the locality where it is to be exhibited, either in the Mairie or other place open to the people. The public exchequer would have to bear the half of the costs of these monuments, the other half to be paid by the department or the commune.

The new Salle of the French Legislative Chambers.—The former tribune of the speakers has disappeared, on which place the benches for the Government Commissioners will be erected. These benches, which will be placed before those of the president and the secretaries, will be opposite to the semicircular seats destined for the members of the Assembly. The former Chamber of Deputies could contain about 500 members. Its size has been reduced by the suppression of the last row of benches, and by enlarging the seats in the ratio of 3 to 2. The second row of the *public* tribunes, which is at a level with the circular colonnade at the rear part of the Salle, will be suppressed.

France. — Arts Department of the Public Service.—Besides the museums of Paris, France possesses such in most of its provincial capitals,—Lyons, Marseilles, Avignon, &c.—some of them rich in art-works of the first order. According to a decree of the Minister of the Interior, dated the 22nd January last, the "general direction of the national museums" forms henceforth a distinct department in that ministry of state. It comprises, besides the public collection of the Louvre, Versailles, Trianon, and the Luxembourg, the superior direction of the provincial museums, with a view to "the ameliorations they may be susceptible of, and the encouragements which may be afforded them." The Director-General of the National Museums is entrusted with the *service* of the annual exhibition of painting, sculpture, and architecture, and the reports to the secretary for home affairs on the distribution of medals and other national rewards to be bestowed on eminent artists. According to the announcement of the Director-General of the National Museums, the next exhibition of art-works at Paris, will take place on the 1st of April, and they are to be sent to the Palais Royal until the 1st of March, at 6 p.m.

THE INCORPORATION OF ARCHITECTS.

EFFECT OF BUILDING ACTS.

It would probably be found that, by imposing upon the architect of any building a definite responsibility for its stability and sound construction, the various building Acts throughout the country might be entirely repealed; the proprietor being required to deposit in some given public office a certificate from a fellow, or even licentiate, of the College of Architects. In case of any question arising relative to the stability of the work, this certificate would be evidence to fix the responsibility upon the grantor. In the present day, it must be confessed that a great deal of professional ingenuity is exercised for the purpose of evading the restrictions of the Building Acts: to so great an extent is this prevalent, that I have heard one of the heads of the profession assert that there is more bad building in the towns possessing Building Acts, and full staffs of surveyors, than in those where the architect and builder are left to their own discretion.

Building Acts necessarily assume a certain mode of construction as a standard in specifying thicknesses of walls and scantlings of timber: vary the mode of construction either in the nature or the arrangement of the material, and the provisions that were reasonable become oppressive.

To relieve the profession from the anomalous fetters at present imposed upon it, would be very gainful both to the public and to architects. It may safely be affirmed that had there been any Building Act for the Menai Straits, no tubular bridge would have been constructed; and it is difficult to assign the limits to the hindrance occasioned to the progress of good architecture by those now in existence. It is desirable that the public should have security for the stability of the different erections which are springing up in all directions. The occasional accidents which happen declare loudly that the existing legal restrictions *do not yield that security*, though they greatly fetter the architect; but give the architect a legal position, recognise the profession in law, and make its members responsible, and the public have the security required.

That the position accorded to architects in the opinion of the general public would be improved by incorporation, I think the following incident will attest:—

I had been treated by a committee in a manner which did not at all accord with my ideas of due courtesy; and in a remonstrance to the chairman, observed, "That the course pursued towards me is such as would not be thought of were an attorney or a physician in the case; and I do not see why an architect is not to be treated with just as much courtesy as is shown to the members of any other profession." The chairman rejoined, "I quite agree with you that architects should be placed on the same footing as attorneys and physicians, but not until they go through the same course of education and pass an examination. * * * I might start as an architect to-morrow morning, but I certainly could not start as an attorney or physician."

This will indicate the influence that a legal status to the profession would exercise over the minds of course and vulgar-minded men.

J. B.

The want of union among the professors of our art, and the consequent evils, have long been felt.

At the meeting convened last autumn by the Architectural Association, on the subject of competitions, I proposed (by letter), the formation of branch associations in every town, which should be in communication with the central one in London, by sending delegates to its important meetings, and by communication through the secretaries on any important matter. This would in some measure supply the place of the corporate body, which distinguishes the legal and medical professions from the architectural and engineering.

I have been waiting for the intelligence of some practical result from the meeting on the competition question above referred to, but though regretting the absence of such result, am not surprised; for, in order to settle this or any other matter of professional rule or practice, you must get the whole body of practitioners interested in the matter; and in order to feel adequate interest in it, all must have some part in the discussion of arrangement. As you cannot expect all, even supposing them to have heard of the meeting, to be present or even to communicate their opinions in writing, the best way of effecting this would be to form branch associations, in whose meetings every one would be able to state his views, and the opinion of the majority could be communicated to the central meeting.

J. P. P.

Norfolk and Norwich Archæological Society.—The annual meeting of this society was held on Thursday in last week, Sir J. Boileau, the president, in the chair, when the report was read and other business transacted. A collection of antiquities was exhibited.

THE "LAR"—HOUSEHOLD GODS.

PERHAPS some of your numerous readers may be able to explain the origin of the word "LAR." I have never found it in any dictionary. My parents used the word in reference to the lar of the chimney, though I have never known it understood by others. The other day a friend with whom I was conversing used the same word for the chimney *shelf*. Now, I have thought it may have reference to the *Lares* or household gods of the ancients, a similar spot having been employed for their reception (or exhibition rather). Certainly it is till the present day the one generally preferred for the placing of little figures, or objects of curiosity and ornament.

THOS. S. BOYS.

*** The connection is undeniable: *Lar* (pl. *Lares*), is Latin for the "fireside," as well as for a household god. It is even translated "one's home." *Ab ipso lare*, to begin at home, was a common proverb. Our "household gods" and the social fire-side are happily still connected.—ED.

NOTES OF IRISH WORKS.

A NEW church has been erected at Doe, county Donegal, according to the designs of the architect to the Ecclesiastical Commissioners. The interior woodwork, sittings, &c. are not yet finished.

A new terminus is being erected at Albert's Quay, Cork, by the Cork and Bandon Railway Company: the foundation-stone has been laid.

Active arrangements are being made for the erection of a suitable building for the conventual purposes of the Sisters of Mercy, Belfast. A portion of the grounds attached to the Catholic seminary on the Antrim road has been purchased for the purpose.

A model farm is proposed to be established at Belfast, according to the designs of the architect to the Commissioners of National Education.

The Building Committee of Freemasons' Female Orphan School are about building a school-house at the Grand Canal Dublin, according to the designs of Mr. George Papworth, architect. Tenders are being received.

The works on the Londonderry and Enniskillen railway are nearly completed as far as Newtownstewart, and the line will shortly be opened for traffic. A deep cutting, about two miles beyond Strabane, occasioned much delay. Negotiations for land between Omagh and Londonderry are being made, and tenders from several contractors have been received.

A new hall, for the purposes of a mechanics' institute, is projected at Newan.

The Town Hall Committee of Cork have not yet finally decided on the selection of a plan for their new building. We hope since such a number of designs (forty-two) have been furnished from several parts of the United Kingdom, that local interest will not supersede superior merit.

Two parochial churches are in progress of erection at Wexford.

The contract for the line of railway from Bray to Wicklow has been taken by Mr. Dargan.

Alterations and additions are about being made to the lunatic asylum at Belfast, by the Commissioners of Public Works, according to the drawings furnished by Mr. Charles Lanyon, the county surveyor.

The "Conciliation Hall," at Dublin, is being converted into an extensive corn store, under the direction of Messrs. Louch and Sons, architects.

The Munster Exhibition of Arts and Manufactures is to open at Cork on the 17th of June: Sir Robert Kane, president of the Queen's College, and Sir Thomas Deane, architect, high sheriff of Cork, have had an interview with the Lord Lieutenant on the subject, and received his full sanction.

The committee for the erection of a new Presbyterian college at Belfast, advertised some time since for plans of the proposed building. Twenty designs were furnished, although no premium was offered. At a meeting lately held, those by Mr. Charles Lanyon, county surveyor, were accepted. The design is in the style which prevailed in the time of Inigo Jones. The entire frontage is 135 feet, and the centre building, in which is a tetrastyle Doric portico, with columns 30 feet high, has an altitude 55 feet; that of the wings at the extremities is 45 feet. It will be executed in cut stone. Arrangements for the immediate reception of tenders are being made. The probable cost will be 2,500*l*.

THE SOCIETY OF COLLEGE YOUTHS.

PERCEIVING in THE BUILDER of the 31st ult. some remarks on the "College Youths," I am induced to send you a few particulars of that body.

The Society of College Youths was established in 1637 by Lord Brereton, Sir Cliff Clifton, &c. and derives its name from the College of St. Spirit and Mary, founded by Sir Richard Whittington, on College-hill, Upper Thames-street, which was burnt down in the Fire of London: its church had six bells, and from ringing these the name of "College Youths" was assumed. Among the notables who have been elected members are the Hon. Robert Cecil (Marquis of Salisbury), Sirs John Bolles and Watkin W. Wynne, baronets; Sirs Francis Withins, Martin Lomly, Richard Everard, Henry Tulse, aldermen, Richard Atkins, Henry Chauncey, Thomas Samnell, Gilbert Dolbin, William Culpeper, John Tash, alderman, Henry Hicks, and Watkin Lewis, knights. At the present time there are 193 members living; the admission fee is 3s.; a register is kept of every member's name, and all peals of 5,000 changes and upwards. The members ring at St. Mary-le-Bow; St. Saviour's, Southwark; St. Magnus, London-bridge; and St. James's, Bermondsey. They have branches at Woolwich, Dorking, and Barnsley, Yorkshire, which regularly correspond with the parent society. Meetings for practice are held every Tuesday at one of the above churches, also for hand-bell practice. Persons desirous of becoming members must be nominated a fortnight previously, to afford time for inquiries to be made respecting character, &c. Trusting the time is not far distant when all parish authorities will take more interest in belfries and ringers,—I am, &c. W. COOTER, Hon. Sec. to the Society.

RAILING IN BELGIUM.

YOUR correspondent of last week ("Charles Hill"), on "railing at home and abroad," has not stated the advantages which may be put against the discomfort of foreign railways; and I wish to add a few remarks on those of Belgium from my own experience. The weighing and paying for luggage affords the greatest possible security, for no one can take it away without producing the duplicate of the ticket posted on each package to the officer in charge of it. The payment exacted is so trifling, that an ordinary traveller's portmanteau does not cost more than a shilling for a hundred miles, and as for the delay occasioned by weighing it in time, I have sometimes sent mine a day before, and always found it safe at the station, where I addressed it. This is a great convenience to artists and architects who like to ramble about. But if you lose a few minutes by having your luggage weighed, it is fully compensated by the mode of gathering the tickets previous to arrival, which is performed while the carriages are running, the guard passing from one vehicle to another by a hand-rail placed outside every carriage. Most persons become a little impatient in England by the detention to gather the tickets. At the Malines station, the times of departure of the trains and the fares for every class are legibly painted. On the platform a man is stationed near an inscription, as follows:—"Station de l'Employé pour donner Information des Convois;" and this man is always at his post, and fulfils his duty with great civility. At Brussels there is a female especially appointed to attend to ladies in the waiting-room, which is an apartment of elegant construction, fitted with luxurious sofas throughout. On the platform of this station, in the large panellings of the walls, the maps of the railroads of England, Belgium, France, and Germany are separately painted, besides information of the costs and duration of the journeys, from Brussels to London, Paris, Marseilles, Bourdeaux, Berlin, Vienna, Trieste, &c. The above may even afford useful hints for English railways.—H. M.

CHARCOAL FOR DRAINING, FERTILISING, &c.

OF the very many purposes to which charcoal is now applied, the drainage of land forms one worthy of notice, in being a cheap and effectual operation: it will in all probability ultimately come into more general use. Upon farms where brushwood, gorse, and thinnings of young plantations are easily obtained, this forms an excellent material to be so employed, and when charred, is porous, light, and hardly susceptible of decay. The brushwood, &c., being made up into faggots of a suitable size, previous to charring, may be secured with a band of wire at either end, and then laid into the drain, which so constructed is not easily choked, for as the material maintains the position in which it is placed, the superincumbent earth cannot fall in by the decay of any support: it is also a preventive to moles, which is a very important object gained.

In the operation there is no absolute necessity to preserve the faggots entire; for it is evident that a heap of sprays of charcoal, broken in pieces from 2 to 3 inches long, would form a more porous material than any equal bulk of stones.

Peat charcoal is likewise found to be a valuable material for filling in drains, and for constructing hollow ones, as it constitutes a light substance when charred in a close oven, also for the purposes of manure or disinfecting agent, its absorbing and retaining powers being great. This charcoal is forwarded in great quantities to London from Ireland; and from the abundance and consequent cheapness of the raw material, from the facility and inexpensive process of its manufacture, from the lightness which renders it easily portable, and from the small quantity necessary to produce a great amount of benefit, peat charcoal is calculated to become a great boon, both as to comfort and health; nor does the fact of its not being recently prepared militate against its usefulness, as however long it may be exposed to the air, and thereby rendered in some degree inert, all its valuable properties are at once restored merely by heating it in a retort, such as is used in the distillation of coal gas. The valuable properties of charred peat as an agent for destroying offensive odours arising from sewers and cesspools you have already alluded to.

G. J. R.

A DIP INTO OUR COMMON-PLACE BOOK.

Ready Method for approximately ascertaining relative Areas.—Mr. Jardine and Sir Geo. Stewart Sinclair ascertained the approximate relative superficies of Scotland, its counties, and the land and water in each, by weighing the parts as cut out with a sharp-pointed knife, from a copy of Arrowsmith's maps, carefully selected of paper of nearly uniform thickness. A portion of each sheet, equal to 5,000 English square miles, measured from the scale of the maps, was carefully weighed: the balance used was sensible to $\frac{1}{100}$ of a grain, when loaded with 2 lb. in each scale. The method employed seems to have been first made use of by Dr. Long, of Cambridge, in 1742, to ascertain the proportion of the land to the water on the surface of the earth.

Gilding.—It has been observed in gilt signs, while the letters generally were so much tarnished by the weather and other causes, as to render it difficult to tell whether they were ever gilded, that where a nail had been driven in, rain—having first corroded it—had then run down, impregnated with the ore, upon the gilt letters, which remained so brilliant that the gold appeared to be newly laid on. From this circumstance, the question suggests itself,—might not corroded iron, or rust of iron, be employed in some way or other in gilding on wood, so as to preserve the brilliancy of the gold for ages?

A Workman's Recipe for Mastic Cement.—112 lb. fine-sifted freestone, dried in a frying-pan or oven; 6 lb. whitening; 8 lb. litharge: to be well mixed together, and kept dry. The walls to be perfectly free of dust or damp; then brushed over with boiled linseed oil; and the cement mixed with same when applied. Is excellent for pointing round window or door frames, as it unites wood and stone together.

"An Experimental School of Mechanical Science remains to be formed."—*Tredgold.*

In using a screw-driver, power will be gained by applying it at an angle with the nail; an angle of 15 degrees giving a leverage of about 1½ inch for every 6 inches in the length of the screw-driver.

Pipes of iron will bend "very kindly," and without collapsing, if they be filled, at the part to be bent, with melted lead, and bent immediately the lead has ceased to be fluid: when the wished-for curvature is obtained, the lead is easily melted out of the pipe.

Blasting Rocks.—The following method of blasting rocks with gunpowder has for a century been practised in the extensive iron-mines in Sweden. Suppose the bore to be 9 inches deep, the lower 4 inches are preserved empty by inserting a piece of pasteboard cut to the size of the hole, and with a stick underneath attached to it in the middle: to prevent the pasteboard being air-tight, four notches may be made, so as to allow the air, but not the powder, to pass through: the orifice is then loaded, stemmed, and fired in the usual way. The principle of action is the rarefaction of the 4 inches of air in the bottom of the hole, when heated by the explosion of the gunpowder, and its *consequent expansive power, or force;* being identical with the bursting of a gun-barrel when improperly loaded in the same way.

Stained Marble.—In the Bodleian Library are shown some specimens of marble representing landscapes and various figures. They are by many considered as freaks of nature; but, in fact, they are nothing more than pieces of stained marble. This art was exercised in the seventeenth century by a Mr. Bird, a stone-cutter in Oxford. Several were shown to Charles II. soon after the Restoration. They were broken in his presence, and found to correspond through the whole substance. Mr. Wood's words are, "William Bird, of Hallywell, in the suburbs of Oxford, did, in the latter end of this year (1657), find out the painting or staining of marble, a specimen of which he presented to the king after his restoration; as also to the queen; and, in 1669, to Cosmo, Prince of Tuscany, when in Oxford.

Water Gleanings.—Hard water, if habitually drunk, is apt to injure the digestive organs, and the glandular and absorbent system. To this are attributed the goîtres to which the inhabitants of mountainous districts, who drink such water, are liable; and which consist in the preternatural enlarging of a gland in the neck. "That which runs over gravel, is always hard."—*Nimrod. To determine whether water be hard or soft;* that is, fit or not fit for domestic purposes:—to a glassful of the water, add a few drops of solution of soap in alcohol: if the water be pure, it will continue limpid; if it be impure, white flakes will be formed. *To make salt-water fresh:*—The distillation of palatable and fresh water at sea was effected by P. Nicole, of Dieppe, by simply causing the steam arising from boiling sea-water, in a still, to pass through a stratum of coarsely-powdered charcoal, in its way to the condenser, or worm-tube. *To make sea-water fit for washing linens, at sea:*—Soda put into sea-water renders it turbid: the lime and magnesia fall to the bottom. As much soda must be put in as not only to effect a complete precipitation of these earths, but to render the sea-water sufficiently lixivial or alkaline. Soda should always be taken to sea for this purpose. *To make artificial sea-water:*—Take common sea-salt, 2 lbs.; bitter purging-salt, 2 oz.; magnesia earth, ½ oz.; dissolve all in river-water, 6 gallons. These, it is said, are the exact proportions and contents of sea-water, from an accurate analyzation. *To make an artificial chalybeate spring:*—Dr. Hare says, if we place a few pieces of silver coin, alternating with pieces of sheet-iron, in water, it will soon acquire a chalybeate taste, and a yellowish hue; and in twenty-four hours flakes of oxide of iron will appear. Hence, if we replenish with water, after each draught, a vessel in which such a pile is placed, we may have a competent substitute for a chalybeate spring.

SIGHTS AND SCENERY.

The Haymarket Theatre. — The audience here were startled into great enthusiasm on the 15th inst. when they found that the graceful actress of the heroine in *Woman's Heart* (Miss Vandenhoff) was the author of the play. It contains much nice writing and good feeling, and only wanted "wedging up," so to speak, and knocking about a bit by a more practised hand, to have obtained high praise. The dignity of the "artist" is asserted throughout, but in asserting it, the artist loses his amiability. The scenery, Renaissance interiors and exteriors, is very good. The second scene, "Angiola's" studio, and "Isolina" sitting as a model, is exceedingly effective. Mr. Barry Sullivan plays "Angiolo" with much ability, but might usefully infuse more vigour in parts.

RAILWAY JOTTINGS.

Mr. Gooch, the superintendent of the locomotive department of the Eastern Counties works, having intimated to the engineering workmen on the line that any of them who should contribute towards the support of the men thrown out of employment by the master engineers throughout the country, would be discharged, the Eastern Counties' workmen met and resolved unanimously that "This meeting, being of opinion that they have a right to expend their wages in such manner as they think proper, do hereby pledge themselves to support the Amalgamated Society of Engineers, &c. to the fullest extent in their power, and will in the meantime cheerfully subscribe one day's wages per week." A member of the executive council of the operative engineers was present, and stated that the Crewe railway men had forwarded 50*l.* on the previous week towards the support of the movement, and he declaimed on the injustice of the masters "condemning and seeking to put down all associations upon the part of the men, whilst they were in the very act of forming an association amongst themselves on the most obnoxious principle."——The London and North-Western directors, it is understood, will now recommend a dividend at the rate of 6 per cent. per annum, leaving about 50,000*l.* to be added to the "rest."——In the Great Western the balance of receipts over expenditure for the past half-year is said to be 313,000*l.* and a dividend of 2½ per cent. for that period will be declared—leaving to next account about 108,000*l.*——In the London and South-Western the net revenue for the half-year amounts to 181,976*l.* out of which a dividend of 5½ per cent. per annum will be paid, leaving balance to next account, 8,548*l.* The increase of receipts over the corresponding period of 1850 was 69,113*l.* while the increase of expenses was only 10,802*l.*——The contracts for the completion of the railway from Weymouth to Castle Cary have been signed, and the only remaining contract (that for the piece of line between Castle Cary and Frome) was ready. The line, like that portion of it complete between Frome and Chippenham, will have only a single rail.——A railway from Edinburgh to Peebles is in contemplation. It will join the North British line at Eskbank station, and be 17½ miles in length. It is estimated not to cost more than 4,000*l.* a mile. Mr. Wm. Chambers, of Glenormiston, the publisher, is among its chief promoters.——An old invention has been experimented with, successfully it is said, at Worcester, namely, an apparatus for taking from, and delivering parcels to, a train at full speed, without manual assistance. The plan consists of projecting parallel bars, horizontally placed, with springs, &c. which communicate with the passing train, take from it the parcel attached to the upper part of the van, and also affix to it whatever may be required to be despatched onward.

CHURCH BELL-HANGING AND RINGING.

In connection with your "chapter on bell-founding," &c. I would say the hanging and ringing of church bells, on our system, belongs almost exclusively to England. The principle of it is as follows:—An ordinary peal of church bells are hung on a frame, composed of strong beams of hard wood, about sixteen or twenty inches thick perpendicularly, and about half that substance horizontally. The spaces for the bells to swing are so shaped that two bells move in one of the four directions, which equalises the swinging force of the peal on all sides of the tower.

The parts of the hanging of the bell consist of the stock or block of wood, the wheel, stay and slide, and the gudgeon or pinion (fastened one at each end of the stock), which, when the bell is mounted and hung in its place, sinks into a square, cut out of the frame, into which is fixed a brass cap, in which the gudgeons turn round, bearing the weight of the bell, wheel, stock, and stay. When the bell is with its cone downwards, it is in a swinging condition, and may be sounded by pulling the rope a foot or more, according to its size, and suddenly holding the rope fast, which, by checking the bell's swinging motion, causes the clapper to strike the side, and, on allowing the rope to slip out of the hand, the bell swings to its opposite side of the space in which it hangs, and by jerking or checking the rope downwards, it strikes again, and thus a continual sounding of the bell follows at regular intervals, which is termed *chiming.* But, in order to bring out the full tone of the bell, another plan of ringing is adopted, by which *art* is made to supply what animal strength could never accomplish, within the reach of one man, and that is, raising and afterwards ringing a peal of changes on church bells, balanced after the following plan: when a bell is raised, the ringer, prior to commencing, folds the end of the bell-rope, as many times round his right hand, in rings, as will raise his hand near to the smooth part on the rope, called the Sally, and taking the end of the rope in his left hand, he clinches the folded rope with his right hand, inside the wrapping, and then commences pulling, which puts the bell in swinging motion, and, by pulling harder each swing, and letting out two or three inches of the rope at each pull, the bell gradually rises, until the end of the rope is a little above his head, the bell raised with its opening facing the top of the belfry, and the rope quite round the wheel, through which one end of the stock passes. To avoid sending the bell over the circle it has made (that would twist the rope a second time round the groove of the wheel, and draw it through the hole in the ceiling of the ringing chamber, and lift the ringer up to it, if he held tight, providing it was a heavy bell), a piece of wood, called the stay, is fastened to the stock, rising two or three feet above it, and made to push another piece backwards and forwards, called the slide, which is placed under the bell, and fastened or supported at one end to the frame, and working backwards and forwards on the opposite end, the distance of which is regulated so as to allow the bell, when set, to lean over sufficiently to ensure a regular balance: thus, each time a bell sounds it makes a circle, prior to the clapper striking its cone inwardly, near the edge, and the sound from the blow of the clapper being carried round with the circle made by the bell, produces the fine swelling tone which a church bell (especially if a large one) sends forth, when rising and swinging, each time it strikes when up. There is something peculiarly interesting in the sight of a peal of large church bells, hung on a frame; and to persons who have no notion of the principle on which they are hung, it must appear wonderful, that a bell, weighing a ton, or thirty hundred weight, can be raised by one man, and be kept swinging round in a peal of changes sometimes lasting four hours; but this

seeming wonder is easily explained. The action of a church bell when raised is the same in the principle that increases its motion as the turning of a wheel, the former acquiring force from its own weight: a little additional strength used by the ringer multiplies on the already acquired force with which the bell swings, until it gradually gets up to a perpendicular position, and when pulled off its weight,—aided by the force of the pull of the ringer,—sends it round, while another pull of the rope brings it round again, *setting* each time the slide, pushed by the stay, allows it to set sufficiently over the perpendicular to cause it to remain firm in its station.

To render bell-ringing more amusing to the ringer, and more pleasant to the listener, *the art of ringing changes* was invented, and improved by some of the best practitioners, by which the changes on a peal of eight bells can be rung correctly, without ringing one change twice over; but as the number on eight or ten bells is too great to be rung at one time, they are divided into peals of two, three, four, or five thousand changes, which, on church bells, can be rung in the time a ringer's strength can empower him to keep a bell in swinging motion.

It is to be regretted that a prejudice against the art has too long existed in persons moving in superior spheres, through its having been chiefly cultivated by persons moving in the humbler positions of life. The upright attitude required to be maintained by the ringer, together with the action it gives to the arms, render it admirably adapted to the exercise of the whole body, and would be highly beneficial to stout persons having no athletic exercise by which to prevent too much corpulency, which in some brings on apoplexy; while three hours' ringing a week would not only prevent the evil by promoting circulation, but would also improve and confirm health.

Some few gentlemen of means and education, whose names I could mention, possessed of stronger minds than those enervated by prejudice, practised the art of change-ringing, and derived advantage as well as amusement from it.

CAMPANALOGIA.

Notices of Books.

Lives of the Friends and Contemporaries of Lord Chancellor Clarendon; illustrative of Portraits in his Gallery. By Lady THERESA LEWIS. In three volumes, with Portraits. Murray, Albemarle-street, 1852.

WERE it not that we of the nineteenth century so lately stood *face* to *face* with a noted abbot of the fifteenth, in St. Stephen's Chapel, we would have said that, next to the living presence, or the works and the biography of those who have played their parts on the stage of life in olden times, our only other mode of arriving at some notion of them, such as might bring them before our mind's eye much as they must have appeared to the living eyes of their contemporaries, is by truthful portraiture. We are of opinion that the man who industriously collected a series of the portraits of the most remarkable men of his time, and handed them down to posterity, is worthy of renown in future ages for that good deed done to posterity, even alone, much more so when we consider that, in spite of inimical charges or insinuations, ever readiest to be believed by some, he was regarded, in his own time, by the majority at least of his contemporaries, as a great man and a good one. Into the merits of the great Lord Chancellor Clarendon as a man, or as a judge, however, we shall not here enter. We prefer limiting our remarks to the portraits and the painters forming the groundwork of these very interesting volumes, and although the great bulk of the matter consists of memoirs of the lives of only two of those whose portraits were preserved by Lord Clarendon, the notices of all the rest of those still remaining in the two divisions of the gallery being limited to little more than a list, we shall not even allude to the two principal subjects, except simply to name them as Lucius Viscount Falkland, and William Marquis of Hertford.

The gallery of Lord Clarendon, after various vicissitudes, was split into two parts, one of which alone, now and for a long series of years at the Grove-park, Herts, belongs to the descendants of the original proprietor, while the other is at Bothwell Castle in Scotland.

Most of the portraits of this celebrated gallery have been attributed to Vandyck, Sir Peter Lely, Wissing, and Sir Godfrey Kneller. As remarked by a historian—

"In this collection an extraordinary assemblage of portraits is to be found of different races, especially the portraits of the different members of almost all the conspicuous families on the King's side in the civil wars; among them the Stanleys, Cavendishes, Villierses, Hamiltons, &c. &c."

Lord Dartmouth, a contemporary of Lord Clarendon's, having in a MS. note to a book declared his belief that Lord Clarendon was open to bribery and corruption of the meanest kind, and subsequent writers having even argued that each portrait might be regarded, of course with exceptions, as a separate *bribe*, her ladyship, the author of the present volumes, after sufficiently discussing an insinuation in itself so mean and so unworthy of a charitable mind, goes on feelingly and justly to remark that—

"The love of art has in all times been honoured as the taste of a refined and cultivated mind. To that taste Lord Clarendon joined in a remarkable degree admiration and respect for distinguished men, and a peculiar tenderness for those to whom he gave his friendship. To the cultivation and enjoyment of those feelings he consecrated his gallery of portraits; and whatever judgment even-handed justice or party bias may pass on Lord Clarendon's policy and character, a single note, written in a style at once vague and hostile, cannot be allowed to cast the stain of corruption on the exercise of these feelings. It is but from time to time that tastes so worthy of imitation are combined with wealth and opportunity for their indulgence. Portraits of companions and friends gathered round the walls of those rooms where perhaps, when living, they have sat in friendly intercourse and serious debate, fill the mind with associations that read a lesson to the heart. A gallery thus formed, that includes many of the most distinguished men of the period, acquires in time a value in the country independent of the pleasure it may have afforded the individual who collected it; and it is to be hoped that in after ages the collection of a late distinguished minister, who is said to have delighted not only in collecting pictures as works of art, but also in surrounding himself with the portraits of the friends and colleagues with whom he had associated and laboured, may meet with the respect due to his taste, without incurring the reproach, two hundred years hence, of their being the price of advancement in his sovereign's favour."

For the sake of posterity itself, this is indeed to be earnestly hoped! Could we by some clairvoyant prevision look into the depths of the twenty-first century and see the sneer of contempt upon the lip of the critic, or the frown of hatred on the brow of the judge, while insinuating charges of bribery and corruption against a statesman of the ninteenth century on so paltry and so mean a ground, what would we think of the morality, not to say the charity, of such a generation itself, that could think so badly of human nature in general, and of their own ancestors in particular?

Lady Theresa, in the third volume of her very interesting, and, in fact, historical work, under head of "Descriptive Catalogue," speaks of the artists to whose labours most of the portraits in the Clarendon Gallery have been attributed. We need not say anything as to the well-known history of Vandyck himself, or even of the equally well-known difficulties in the way of a satisfactory identification of the actual handiwork of a man so imitated, but we may quote the following as a condensation of the chief peculiarities of his style:—

"There are many peculiarities in the composition of Vandyck's pictures which characterise his pencil, and which mark what in art may be termed his 'feeling' in composition, his arrangement of light and shadow, and the form of his designs. The frequent introduction of a small portion of landscape in the background—the mass of shadow produced by some object introduced on one side of the picture—the extraordinary delicacy of his half-tints, and even the peculiar blue hue which his pictures assume when faded—the pointed hand, the arm resting on the hip or on a ledge, so as to relieve the straight line of the standing figure by the introduction of a triangular form on the side, or the foot raised on a step to produce the same effect by the bended knee—the rich satin in his costumes—the precision of touch, without hardness, of elaborately worked lace—the often repeated roses, in the hand or on the table, with his female portraits—the favourite attitude of the hand clutching the skirt of the gown—the simplicity with which he imparted force and dignity to his portraits of men, of cold serenity to those of women, and of well-bred demureness to his children, are so many types by which the hand of Vandyck may be traced."

Lely, as the author truly remarks, has been even more successfully assailed and injured than Vandyck:—

"Any broadly painted daub, with large eyes, long curls, and loose insufficient drapery, is unhesitatingly offered for sale as a genuine 'Lely;' and between indifferent copies and downright forgeries, such a host of so-called beauties have been accepted as Sir Peter Lely's productions, as would have reflected little credit on the taste of the Court at which they could have been so considered, and have tended much to lower the estimation in which Sir P. Lely well deserves to be held by the merit of his genuine works. It would be well for his lasting reputation could he be more known by some of the portraits that remain from the Chancellor Clarendon's collection."

Of the paintings of Wissing and Kneller, there are many in the collection still remaining of the Clarendon Gallery:—

"There was enough remaining in their pictures of the style of Lely to show that they came after him: there was imitation but deterioration. The constrained posture of the figure—the somewhat affected position of the hands—the fluttering draperies, and too incongruous mixture of rocks, fountains, and full dress to be found in some of Lely's portraits, are, by Wissing especially, repeated and exaggerated, and without the merits that could throw such defects into the shade. There is always a difficulty in so painting the costume actually worn at any given period as to avoid what may seem the tailor's or mantua-maker's precision in fixing a fashion, and yet to preserve that identity of dress which shall mark with historic truth the manner in which the subject of the portrait really appeared to his contemporaries. But that difficulty is not overcome, but simply avoided, when, in lieu of any costume that could be worn, appears a sort of accidental folding together of various pieces of coloured curtains without form, and often in Wissing's pictures, in order to screen figures without substance. Still, though the works of Wissing, Dahl, and Kneller mark the decay of art from the days of Van Somer, Cornelius Jansen, Vandyck, and Lely, they may be said to hold a midway place in the fall: the art of portrait-painting had to sink much lower ere it rose again. Time also has probably used its mellowing influence on their works; and we must thankfully acknowledge that their pencils have preserved to us the likenesses of some to whom history has assigned a dignified place, and preserved to many a family the resemblance of those whose beauty and worth have not so long passed away as for their memory to have ceased to be regarded with interest or with pride by their descendants."

Besides Vandyck, Lely, Kneller, Wissing, and Dahl, there are portraits still remaining amongst those at the Grove and at Bothwell Castle, known to be by Jansen, Stoup, Key, and Vanloo. The remains of the great gallery themselves by no means constitute a small collection. Amongst a multitude of other portraits, they contain more or less authentic likenesses of Buckingham, Raleigh, Leicester, Burleigh, Cecil, Bacon, Charles II. and family, Monk, Montrose, Selden, Camden, Laud, More, Chaucer, Thomas Lord Cromwell, Beaumont and Fletcher (Shakspeare is unfortunately missing, although searched for through all the attics and cellars at the Grove), Cowley, Queen Mary, Queen Anne, Clarendon himself, Rochester, King Charles I. Charles XI. of Sweden, Coventry (Lord Keeper) Hyde, Waller, King James II. &c. &c. There are various other pictures besides portraits, and also some prints, in the remaining collection.

It is to be hoped that Lady Theresa Lewis means to proceed with the series of memoirs of the principal characters in her great ancestor's gallery, which she has so ably begun, and which she has drawn partly from original notes and manuscripts heretofore unpublished.

On the Importance of special Scientific Knowledge to the Practical Metallurgist. By John Percy, M.D. F.R.S. Her Majesty's Stationery Office. 1852.

On the Science of Geology and its Applications. By Andrew C. Ramsay, F.R.S. Her Majesty's Stationery Office. 1852.

On the Value of an extended Knowledge of Mineralogy and the Process of Mining. By Warington W. Smith, M.A. Cam. F.R.S. &c. Inspector of Mines to the Duchy of Cornwall. Her Majesty's Stationery Office. 1852.

The lectures in the Government School of Mines and of Science applied to the arts at the Museum of Practical Geology in Piccadilly are making progress. The three more lectures now issued are in themselves sterling and instructive ones to practical men even though merely introductory.

"It is not pretended," says Mr. Smith, "that by any plan of education in an Institution of this kind, it is possible to make a miner, or in other words, to prepare a man for taking charge of a mine as soon as he has left our walls: not more reasonably should we expect that a lad drilled in the classes of a naval college were at once metamorphosed into a sailor, fitted at once to take command of a ship. Yet surely no one will deny, that if in that school he has learnt to box the compass, to knot and splice, if he has worked out problems in navigation on sound mathematical principles, if he has been taught by descriptions how to handle a vessel at anchor in a tideway, or on a lee-shore, he will be infinitely more ready to take advantage of circumstances, and to make rapid progress, than if he had been sent on board unknowing of these things and their principles. No 'royal road' to learning, no legerdemain of 'cramming,' can make amends for the want of time and pains bestowed on the acquisition of practice; and as with the seaman so should it be with the miner."

Miscellanea.

The Engineering Trade Differences.—The masters' Combination, on previous notice, have opened their workshops to all willing to sign a declaration issued renouncing all operative combination, and otherwise binding themselves to the masters' terms; but it seems that adherents of the skilled class come rather slowly in, while, on the other hand, the French and Belgian masters are hard at work engaging them at high wages, and shipping them off by hundreds to their foreign workshops, where it is said that orders intended for British masters already await their arrival. It is much to be feared that there is now a risk of some such result as that whereby the silk trade of Nantes was transferred to this country, where the descendants of foreign workmen still ply the shuttle as their forefathers did at home. We are likely, therefore, to be "payed off" by the French and Belgians for our advantages on that old score, unless some good understanding be very quickly come to between the masters and their men. The masters were too hasty, we feared, and their subsequent tactics have been rather more energetic than equitable. Their determination to "do what they liked with their own" has, indeed, been made a handle of, as we anticipated, and has done no little good to the workmen's cause. The building trades, compositors, and others of the higher class of associations, have taken an interest in the struggle, of course supporting the operatives against the masters, and that not with mere moral countenance, but with hard cash.

Steam Sawing Match.—On 29th ult. a match came off at the Cornbrook Saw-mills and at a mill newly-erected by Mr. Charles Hunt, at the Victoria Quay, Water-street, Manchester, the stakes being for 50*l.* and "a spread." The conditions were that each frame was to carry thirty-five saws, to saw a pine log 20 feet long and 24 inches deep. The points of excellence contended for were to be speed, quality of work, and the least loss of wood. By Mr. Hunt's machine ten feet of timber were cut in nine minutes, and after all the work had been done on both sides the umpire declared Mr. Hunt's machine had won all the points.

Gas.—Our contemporary the *Journal of Gas-lighting*, which, though decidedly in the *supposed* interest of the old companies to uphold high prices, appears to be entitled to consideration as a temperately conducted publication, calls our special attention to the complaint of Messrs. Tallis, as a proof that cheap gas must necessarily be bad, and dear gas good. We happen, however, by anticipation, to have already (See last number) sufficiently exposed the fallacy of such a conclusion, even before our attention was drawn to the *Journal of Gas-lighting*; and really that journal knows quite as well as we do that it is far too late, now that so many proofs of what gas *can* be made and sold for here and elsewhere have been adduced, even to characterise gas sold in the metropolis at 4s. a thousand cubic feet as "cheap" gas in the sense implied, even sold as it is of admittedly good quality at that price by the Chartered Company, who, according to the *Gas Journal* itself, are likely to *profit* by their determination to give a good article at the price. So far from supporting the so-called Central Gas Consumers' Company, however, we wish it to be distinctly understood that we regard that company as having sold itself out and out to the upholders of high prices; and what could be anticipated from such a fact but that some immense and glaring system of jugglery would be practised in order to damage the movement in favour of cheap and good gas? If such a conclusion should appear to reflect unjust suspicion on individuals still connected with such a company, whom have they to blame but themselves in continuing to have anything to do with it after it had displayed even its first symptoms of an inclination to amalgamate and *identify* itself with the very cause of dear gas and bad, for which it was to have substituted cheap gas and good?

Improvement of Workmen.—Much having been said of late upon the subject and necessity of instructing the workman, it may be hoped that some steps are being taken to forward that most desirable object, which none know and feel the want of so much as those engaged in the execution and production of works of art and decoration, and who should be the persons to do all in their power to forward and promote this important work, and lay down a system by which to prepare the minds of the artisans for the reception of the kind of instruction they require, without which no good result can be obtained; and there are many evils of this kind to contend with. I have endeavoured to establish for my workmen an evening class for the practice and study of drawing, modelling, reading, &c. and have laid before them 500 casts and models from ancient works in England and Germany, with many hundreds of sketches and drawings, and a few books, in order to create and establish an interest in the works we produce, which should, as in the beautiful works of old (the last fragments of which we admire and prize), form of itself an object of delight, as we watch its progress through the different stages of formation, with an anxious desire for its perfect completion.—J. R.

Brighton Pavilion.—One of the gates fell on Tuesday week during a storm and killed a lady besides injuring other persons, The jury on the inquest returned a verdict of accidental death, and expressed an opinion that the hinges of the other gate being of cast-iron should be replaced by wrought-iron ones. The hinges of the gate which fell are said to have given way previous to the accident.

Masters and Men.—On Friday, 13th inst. Mr. Ludlow gave the first lecture of a course at the Marylebone Literary Institution,—as suggested by the Society for Promoting Working Men's Associations, of which he is a member,—on "Capital and Labour—the Master-Engineers and their Men." He spoke of having endeavoured in vain to obtain a hearing through the press by writing in his own name, and now entered fully into the evils that are not very unlikely to arise through the present lamentable contest between masters and men—urging self-employment by the men. He alluded to the large sums that the society had paid in relieving the sick and infirm members, and funeral fees allowed to the widows.

The Timber Trade.—According to the annual circular of Messrs. Chaloner and Fleming, of Liverpool, the imports are considerably on the increase—268,960 tons in 1851, against 221,499 in 1850. This is deemed a fitting time to agitate for the abolition of the existing duties. Recent quotations are—American pine, 12d. to 19d. per foot. Red pine, 16d. per foot. Quebec deals, second quality yellow pine, 9*l.* to 9*l.* 9s. per standard; third, 8*l.* to 8*l.* 7s. 6d.; third spruce, 8*l.* 2s. 6d. per standard. Fir planks—New Brunswick and Nova Scotia, &c. St. John, 7*l.* 15s. and 8*l.* 10s. per standard; Wallace, 8*l.* for deals, and 8*l.* 5s. for battens; St. Stephen's, 8*l.* 8s.; Sackville and Richbucto, 8*l.*; Redeque, 7*l.* 15s.; Prince Edward's Island, 7*l.* 12s. 6d. to 7*l.* 15s. per standard. Birch, 14d. per foot to 16½d., 17½d. and 21d. per foot; Nova Scotia, 12d. and P. E. Island, 13½d. per foot. Quebec oak, 18d. per foot, and 20d. to 21d. Lathwood, 5*l.* to 6*l.* per fathom.

Look to your Ceilings.—A few days ago, in a sitting-room in Lambeth, the greater portion of a plaster ceiling, within the cornice, fell down without affording any warning beyond an unsightly crack which had existed for some time previously: two ladies had a very narrow escape of being, at least, seriously injured: as it was, one of them, a visitor, before she could escape, had her comb shivered to atoms, and received a severe contusion in the body, and sundry other bruizes, by which she is laid up, and placed under medical treatment. The fragments of the ceiling showed an expenditure of substance, not only wastefully lavish, but much too trying for the laths to sustain; and, indeed, in the aggregate, no trifling burthen for any frail tenement of (burnt) clay to bear: in thickness, it varied from 1½ to at least 2 inches! a minimum specimen weighing 10¾ lbs. to the square foot, or, the average, 1½ ton to a room say 20×15 feet. Only a few laths were broken; those to which the ceiling had adhered: the back of the plaster showed that generally it had parted from the laths for some considerable time, the key having been broken. A short time ago a similar occurrence took place in a village a few miles from town, when an aged and bedridden gentleman was found nearly smothered in the rubbish, saved, probably, by the bed-hangings.

Directing Reins for Close Carriages.—We wonder that the idea has not long since occurred, that the check-string which is used in close cabriolets for stopping the driver, that you may give him directions, might be converted into a pair of *reins*, so as to communicate to him all the windings of his devious way, and its eventual termination (supposing you to know it yourself), and by that means haply to obviate the necessity for protruding your head into other driving *rains* or buffeting winds, and straining both neck and voice in telling him in many words, and with some accompanying delay, what a pull at his right or left elbow could not fail to express much better, and without any loss of time. We have heard that ladies' bonnets have more of the gossamer than felt about them; and also that to them the wielding of power of any kind is attended with rather an agreeable sensation than otherwise: if such things be, then the laying-on the directing-reins would be, to at least the tender portion of animated nature, a decided boon, while their adroit use would be invaluable practice to those in whose visions of earthly felicity pony phaetons flitted *in prospectu*. We recommend the notion to the consideration of cab proprietors, and hope they will immediately order it to be laid on the table, and (as our friend *Punch* saith) not on the shelf.

Worcester Cathedral.—The elegant little spires at Worcester Cathedral, which gave such character to this beautiful building, were, according to the plates in "Green's Worcester," *fourteen* in number—that was in 1764. And now, alas, in 1852, only *two* remain. A third was up a short time ago, but has just been taken down. If the Deanery or the Prebend's houses were in a bad state of repair, we wonder if they would allow them to be removed and not built up again.

ILLUSTRATIONS of LINCOLN MINSTER.—Mr. Willson is about to publish a complete description of a Cathedral Choir, as it existed in the middle ages, and has selected the choir of Lincoln Cathedral as exhibiting the finest set of stalls in England, since those of York Minster perished in the unfortunate fire of 1829. They were erected soon after the middle of the fourteenth century, when our ecclesiastical architecture was in its zenith. Their present state is remarkably perfect, notwithstanding the natural effects of time in the course of nearly five centuries,—the barbarous violence of the civil war of 1644, when the cathedral was sacked and defaced by the Parliamentary troops,—and the intrusion of some ranges of modern pews, of a mean and unsuitable style.

ARCHÆOLOGICAL INSTITUTE.—On the 6th, Mr. Greville Chester gave an account of the discovery of curious relics of ancient warfare, in Blenheim-park. Mr. Scharf related the details observed by him during the recent examination of the mummy found in St. Stephen's, Westminster, and he laid before the Society the series of drawings which he had made. It appears satisfactorily ascertained that the remains were those of William Linwood, bishop of St. David's, Keeper of the Privy Seal, who died in 1446. The Rev. J. L. Petit sent drawings and an account of a very picturesque structure near Rouen,—a medieval dovecot, decorated with moulded and coloured ornaments of terra-cotta. Mr. Freeman read a "Memoir on the Church at Whitchurch, near Bristol." Mr. Nesbitt described some striking works of monumental art, which had lately come under his observation at Bamberg and Cracow, especially the tomb of Otho, bishop of Bamberg, who died in 1192. Mr. Franks gave detailed notice of the progress made in the arrangement of the various antiquities in the British Museum, found in England.

THE ART-UNION OF LONDON.—We would direct our readers' attention to the advertisement by this admirable institution in our present number, from which they will learn, if unknown to them before, that the engraving of Frith's "Merrymaking" is being delivered to subscribers on payment of the subscription. Those who are wise will send at once, and so secure good impressions. The Right Hon. Lord Monteagle (a long tried friend of the Association) has been elected president. The council have determined on issuing a medal, as part of their series, commemorative of the late Mr. Wyon, R.A. and have commissioned his son, Mr. L. Wyon, to execute it. It has also been determined to issue a series of illustrations of Byron's "Childe Harold" for a future year. A better subject could not have been selected.

THE HOMES OF THE WORKING CLASSES.—Mr. W. B. Denison, on Tuesday in last week, read a paper on this interesting subject to a numerous audience in the Chamber of Commerce, Leeds. The object of Mr. Denison was to rouse the community at large to the general advantage of improving the dwellings and promoting the health and cleanliness of the lower classes, and to point out the fact that this might be done to the pecuniary profit of capitalists. At the close of the paper the meeting was addressed by various gentlemen.

GRUNDY'S WINTER EXHIBITION.—Several interesting works have been added to the collection in Regent-street since we first visited it, including a fine drawing by Turner, the finished sketch for Frith's picture of an old woman being tried for witchcraft, and an eastern drawing by Perlotto. The specimens by Prout here have acquired additional value by his lamented death.

BOOTH'S SMOKE-CONSUMING FURNACE.—A patent has been taken out by Mr. Booth for a smoke-consuming furnace, in which the fuel is supplied from above, and the smoke given out falls forward into a chamber, called the "receiver," where the admixture of air takes place. Combustion thus promoted, it is said, enables Mr. Booth to use fuel which otherwise would be rejected, such as "culm" or "slack." A close chamber can be heated up to some thousands of degrees of temperature, and thus this furnace is said to be well adapted for the drying of bricks, and the evaporation of brine in the preparation of salt. In the manufacture of bricks, 20,000 bricks, it is stated, can be dried in twenty-four hours, and the brick-making can go on uninterruptedly all the year round.

TO CORRESPONDENTS.

REGGIO's Second Letter to SORILLAR, on the History of Architecture, next week.

Concluding letter, "Architecturus to his Son," speedily.

"Pitch Pine."—"J. M. M." asks,—"1st, was pitch pine timber used in the construction of the *Amazon?* 2nd, does the inflammable nature of pitch pine disqualify it for building steam vessels?"

"Inquisitor" (there is certainly such a "business as architectural draughtsman separately from the business of an architect," but we do not advise our correspondent to set himself down to it), "Campana" (the church named was not pulled down, but much of the old work was made to give place to new), "R. S." (must tell us something about the system before we announce it), "J. P." "M. G." (we decline recommending. Messrs. Randall and Saunders's machine, advertised in our pages, is worth his attention), "H. G.", "Patience" (apply to the advertiser), "An Old Westminster" (several articles on the subject of roads will be found in previous volumes of our journal), "W. G. C." (pray send no other blocks in the same way), "J. A. B.", "M. and Co." (shall hear from us), "T. H. H." (thanks), "K.", "D. W.", "Mr. L." "J. B." Liverpool (thanks), "J. F. jun." (the Carpenters Company, the Bricklayers Company, &c. have each separate arms. We cannot give the sketch he requires), "G. J. R.," "J. B.," London (thanks), "Builder" (the exhibition *alone* would scarcely justify the expense), "J. W.," "C. J. P.," "□" (we cannot advocate the removal of bridge), "C. S.," "F. H. P.," "J. J.," "J. R.," "Campanalogia" (shall appear), "J. C.," "J. S."

"*Books and Addresses!*"—We have not time to point out books or find addresses.

ADVERTISEMENTS.

THE ARCHITECTURAL EXHIBITION (with the collection of Materials, Patents, Processes, &c., connected with Architecture), IS NOW OPEN from Ten till dusk, at the Portland Galleries, opposite the Polytechnic Institution, Regent-street. Admission One Shilling, including Catalogue. Season Tickets, including a Catalogue, admitting the holder from the 10th of January to the 18th of March, Two Shillings. Free Tickets may be had for Workmen, on application at the Galleries.
JAS. EDMESTON, Jun. } Hon. Secs.
JAS. FERGUSSON, F.R.A.S. }

NATIONAL DEFENCES.—ROYAL POLYTECHNIC INSTITUTION.—An Explanatory Description of the Prussian Musket, the Lancaster and Minie Rifles, Jones's American Rifle, the various Revolvers, and other Fire-arms, with the improved Conical Bullet, will be given by Mr. Crispe, daily at a Quarter to Three o'clock, and at Half-past Eight in the Evening.—A Lecture on the Music of Many Nations, by T. Thorpe Peed, esq. Professor of Singing at the Royal Academy of Music, on Monday, Tuesday, and Thursday Evenings, at a Quarter to Eight o'clock.—Lecture on Astronomy, by Dr. Bachhoffner, on Wednesday and Friday Evenings, at a Quarter to Eight o'clock.—Lectures on Chemistry. Dissolving Views, &c.—Admission, 1s.; Schools and Children under ten years of age, half-price.—Open daily from Eleven to Five, and every Evening, except Saturday, from Seven till Half-past Ten.

ARCHITECTURE, CIVIL ENGINEERING, SURVEYING, &c.—Offices, No. 30, Southampton-buildings, Staple-inn, Holborn. Established above forty years. Mr. GRAYSON begs to inform those gentlemen who are interested in the above sciences, that he continues to GIVE INSTRUCTION to morning and evening classes, where, besides architecture, &c., ornamental, perspective, and landscape drawing, with access to an extensive and valuable collection of models and works on the fine arts.—Mr. GRAYSON in attendance from 9 a.m. to 2 p.m., and from 6 to 9 p.m.

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The FIFTH ANNIVERSARY DINNER will take place at the London Tavern, on Wednesday, March 2d, 1853.
T. PIPER, Esq. in the Chair.
HONORARY STEWARDS.

H. N. Armania, esq.
J. M. Blashfield, esq.
R. P. Brown, esq.
G. Briand, esq.
J. Jay, esq.
R. W. Keunard, esq.
G. Lock, esq.
S. Lee, esq.
V. Bellman, esq.
R. L. Curtis, esq.
E. Carter, esq.
H. Christie, esq.
H. M. Cooper, esq.
J. Dale, esq.
W. W. Dennis, esq.
G. H. Ellis, esq.
E. B. Gammon, esq.
J. Glenn, esq.
J. C. Hardwick, esq.
H. C. Holland, esq.
— Husler, esq.
T. Jackson, esq.
C. Lucas, esq.
J. Little, esq.
G. McLennan, esq.
W. Mosley, esq.
A. Mason, esq.
T. Magnus, esq.
G. Myers, esq.
T. Nesham, esq.
W. Norris, esq.
T. Nye, esq.
T. Peake, esq.
M. Pass, esq.
H. Richardson, esq.
T. Stirling, esq.
J. Taylor, esq.
S. Trickett, esq.
J. Tillett, esq.
H. Treggon, esq.
W. Tuckwell, esq.
S. Watkins, esq.
W. Webb, esq.
E. Wallis, esq.
T. Wallis, esq.

Tickets to be had at the Bar of the London Tavern; also at the Bar of the Bay Tree Tavern.
W. ALLARD, Secretary.
Bay Tree Tavern, St. Swithin's-lane, Feb. 19, 1853.

CARPENTERS' COMPANY.—TWICKENHAM ALMSHOUSES.—A VACANCY has occurred in the above Almshouses. Applicants must be Liverymen or Freemen of the Company, of the age of 55 years or upwards, or Widows of Liverymen or Freemen of the Company, of the age of 50 years or upwards.—Applications are to be left at Carpenters' Hall on or before 28th February, 1853. Forms of application may be obtained at the Beadle's Office at the Hall.

TO PARENTS AND GUARDIANS.
AN ARCHITECT, who has erected many public and private buildings, and is engaged in the various branches of surveying and valuing property, has a VACANCY for a PUPIL, who would have every facility of acquiring a practical knowledge of the profession.—Address, P. Q. at Swale and Wilson's Library, 21, Great Russell-street, Bloomsbury, London.

TO MASTER BRICKLAYERS AND BUILDERS.
THE Widow of a Master Bricklayer is desirous of APPRENTICING her son to the BRICKLAYING. He is 15 years of age, a strong active youth, and has had some experience in the business.—Apply by letter (postpaid) to A. B. Post-office, Mill-hill, near Hendon, Middlesex.

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WANTED, a Person who understands making WATER-COLOURED DESIGNS for stained glass.—Apply by letter, post-paid, to S. P. Mr. Edward's, 1, Seymour-street, Euston-square.

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WANTED, a CLERK, in a large Retail Timber, Deal and Mahogany Yard, in London. He must have been accustomed to the trade, write a good hand, and quick at figures. Security will be required.—Address, giving real name, to E. W. Office of "The Builder," 1, York-street, Covent-garden.

WANTED, immediately, a good and expeditious DRAUGHTSMAN in an office in the country; one perfectly capable of making both working and finished drawings, and who also understands the general routine of a surveyor's office.—Address, pre-paid, stating salary, &c. to Y. Z. care of Mr. Keunedy, News Agent, 31, Royal Exchange.

WANTED, immediately, a Person to take the Charge and Superintendence of the Timber Department in the Construction of a large quantity of Railway Carriages and Wagons in Italy. No one need reply to this advertisement unless he is a thorough good workman and understands his business, and can give unexceptionable reference. A person that understands the French or Italian Languages would be preferred, provided he has all the qualifications as before stated.—Apply by letter to J. and E. PICKERING and CO. George-street, Edgbaston, Birmingham.

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WORKING FOREMAN.—Wanted, in a London Shop, where about thirty hands are employed, a steady, experienced man, who is practically acquainted with the principle and manufacture of close cooking stoves, steam-boilers and fittings, and hot-water circulation, and has a general knowledge of the different branches of the business. One familiar with gas, as applied to cooking and warming purposes, preferred. Good reference as to ability required. Adequate wages given.—Address, by prepaid letter, to J. W. Messrs. R. W. Kennard and Co.'s, 67, Upper Thames street (care of Mr. Crowther).

TO PLUMBERS AND BUILDERS.
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WANTED, by a Young Man, aged 22, a SITUATION as FOREMAN in either the English or Foreign Timber Trade, having had six years' experience in the above business, and has a thorough knowledge of the lath rending.—Address, JAMES BIRD, Boughton Hall, next Faversham, Kent.

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WANTED, by the Advertiser, a Situation as CLERK of WORKS, BUILDER'S CLERK, or SUPERINTENDENT. He is a practical man, thoroughly conversant with the duties of a builder's office, and can produce testimonials from former employers. No objection to the country.—Apply, prepaid, to Y. Z., Jobson's, Stationer, Regent-street, Westminster.

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THE PRINT OF

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444, WEST STRAND, *Feb.* 14, 1852.

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LEWIS POCOCK, } *Secretaries.*